

FIG. 1

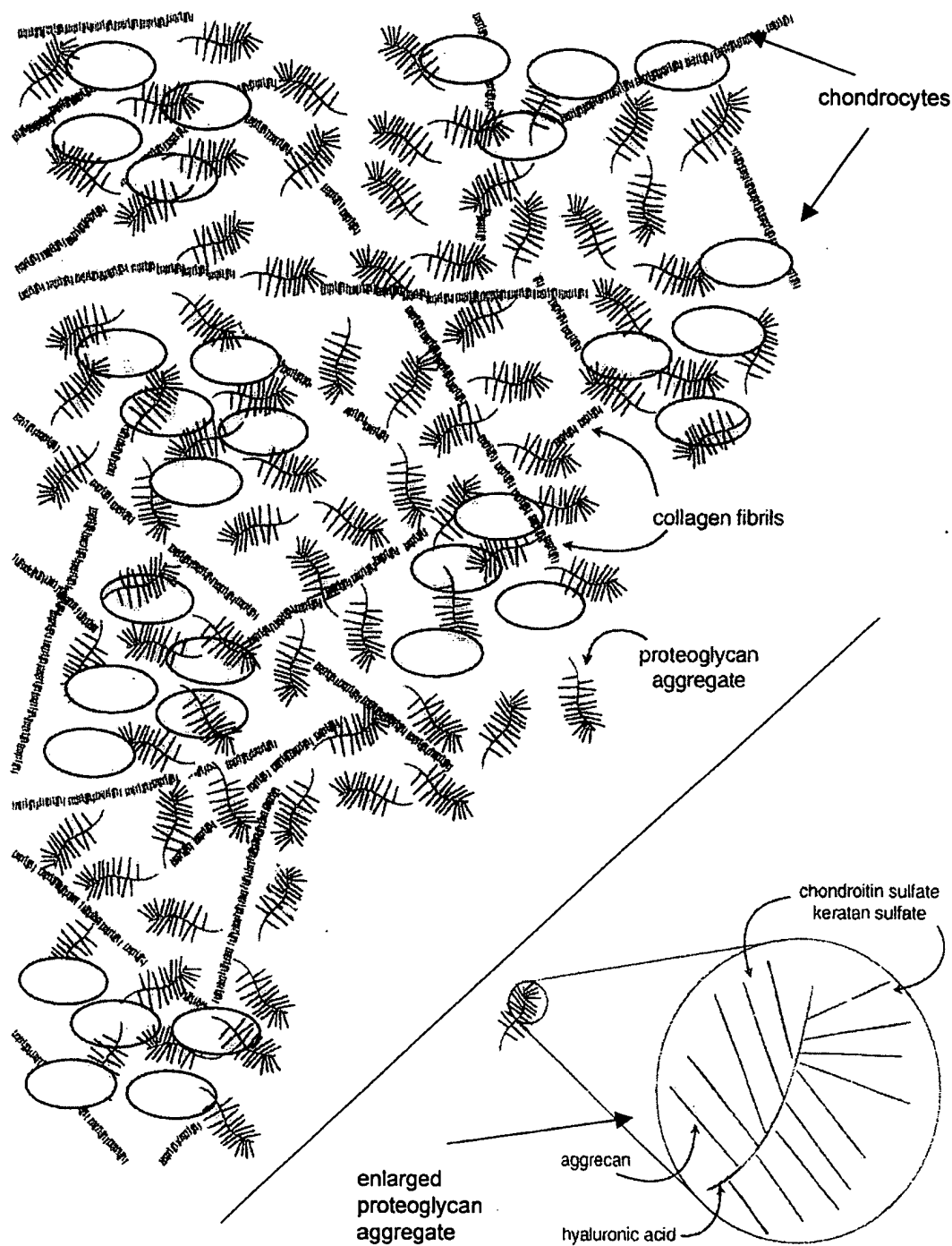


FIG. 1A

FIG. 2

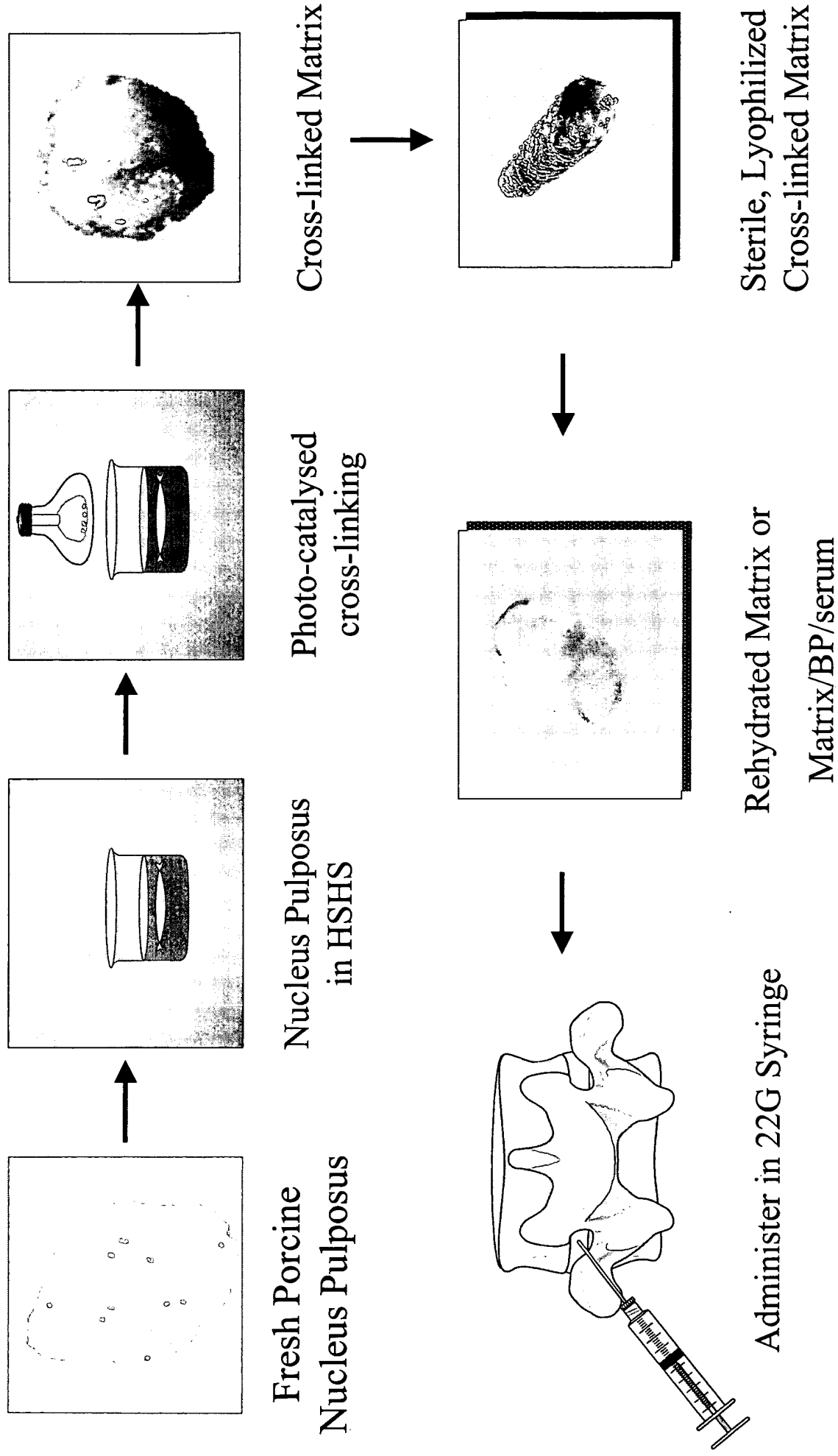


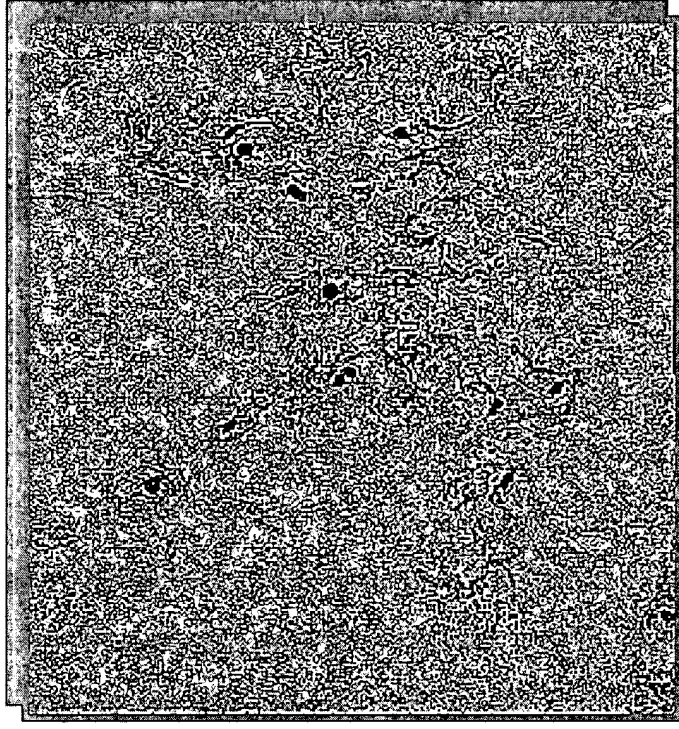
FIG. 3



FIG. 4



Fresh Nucleus Pulposus



Cross-linked Matrix

FIG. 5



A B

FIG. 6

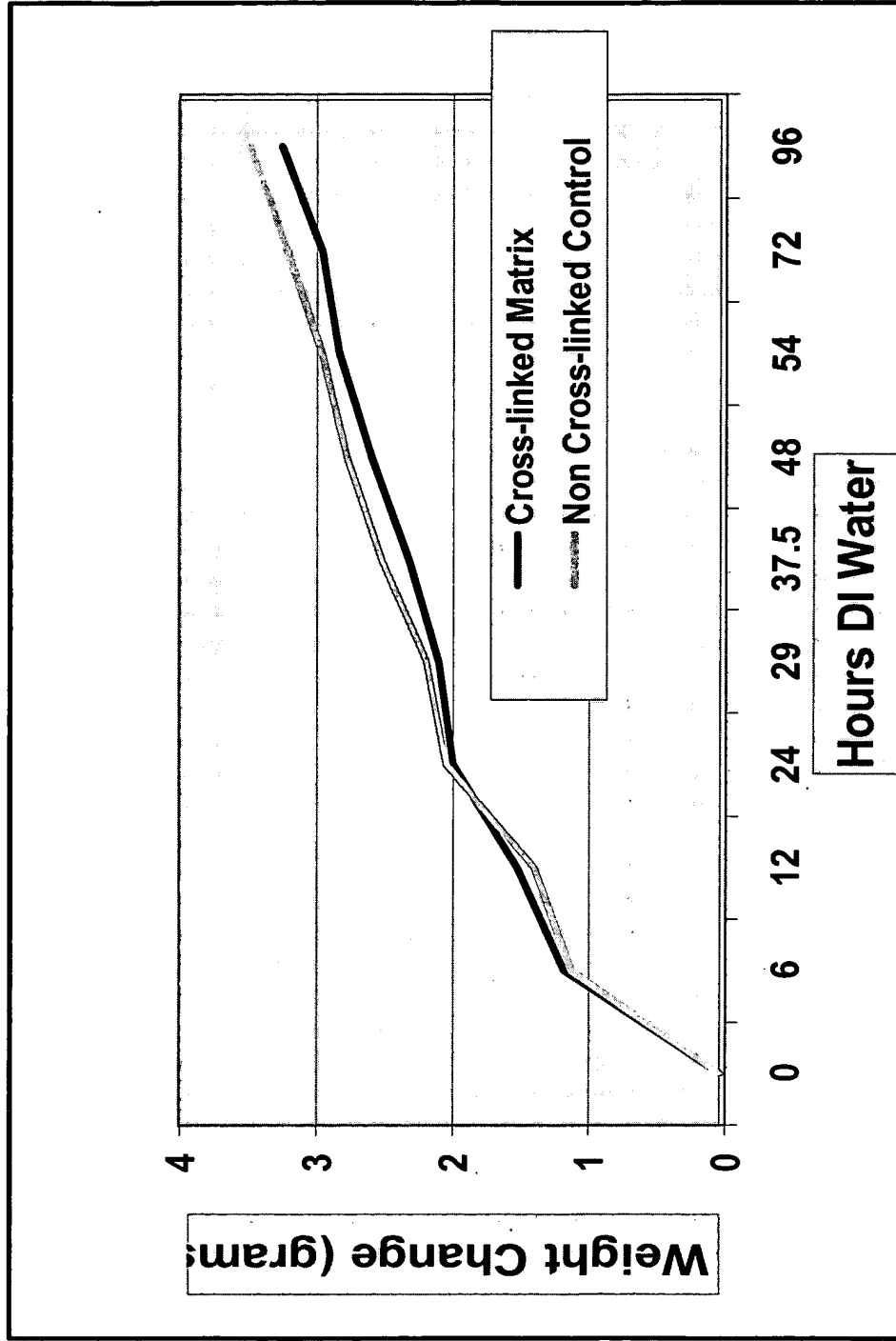


FIG. 7

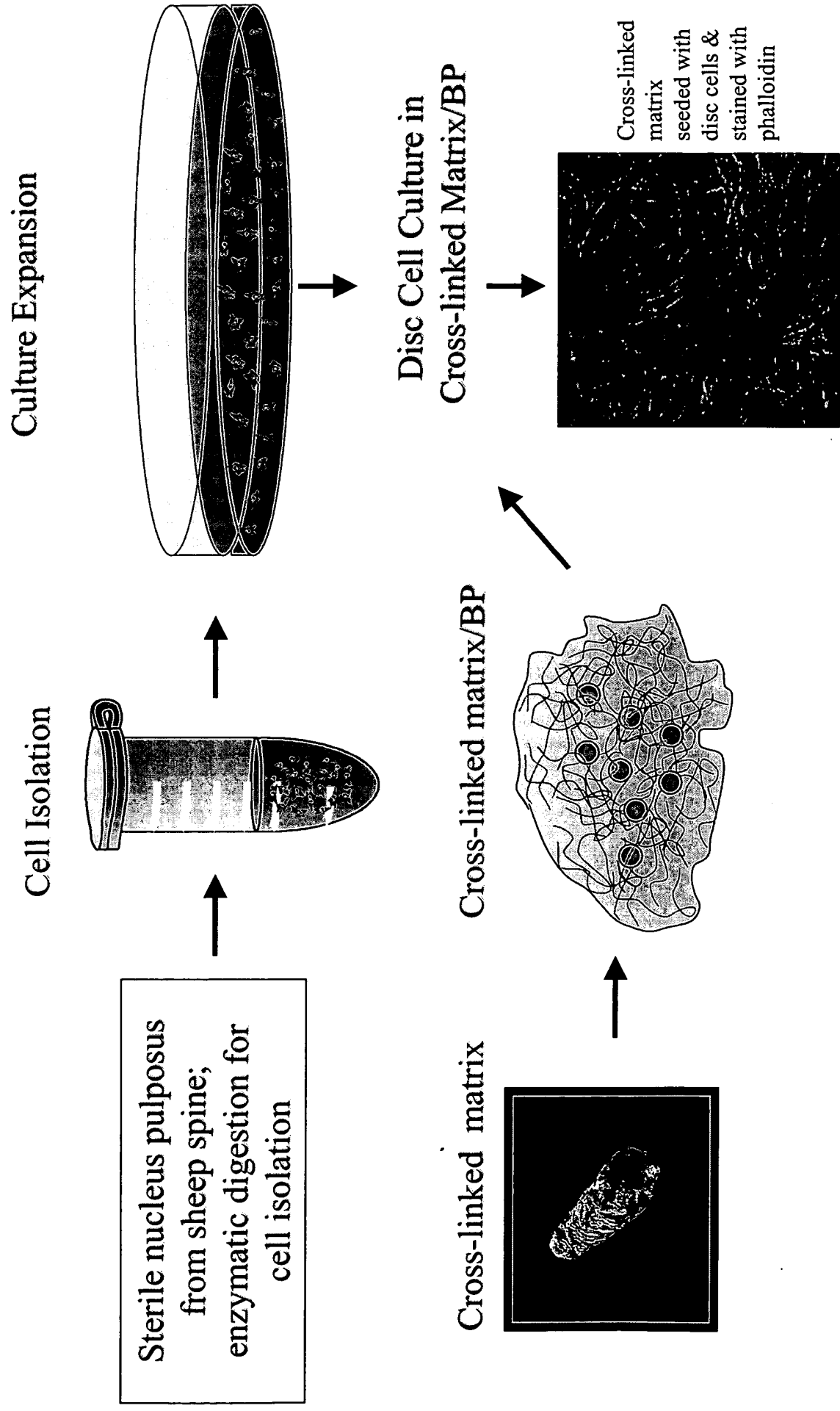


FIG. 8

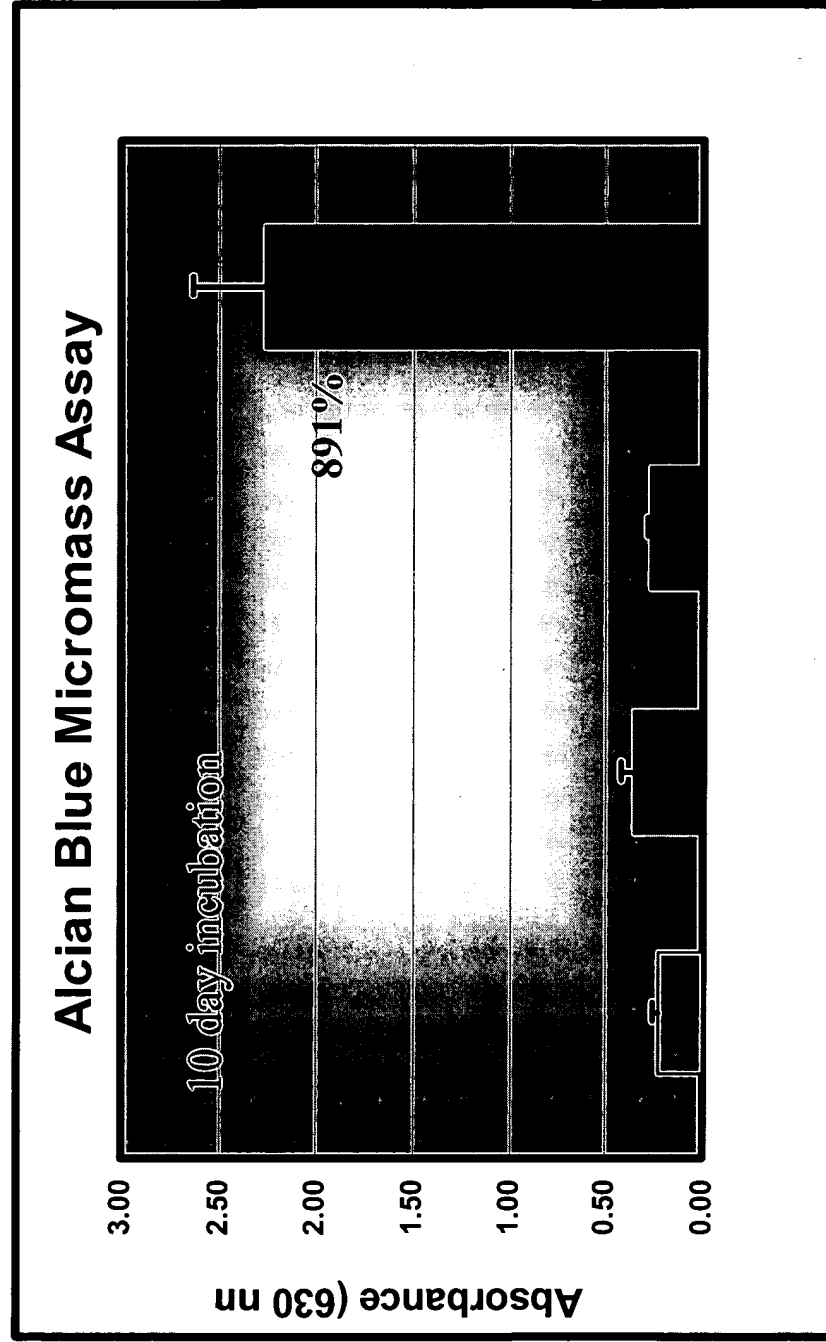


FIG. 9

ELISA Analysis of Cross-linked Matrix

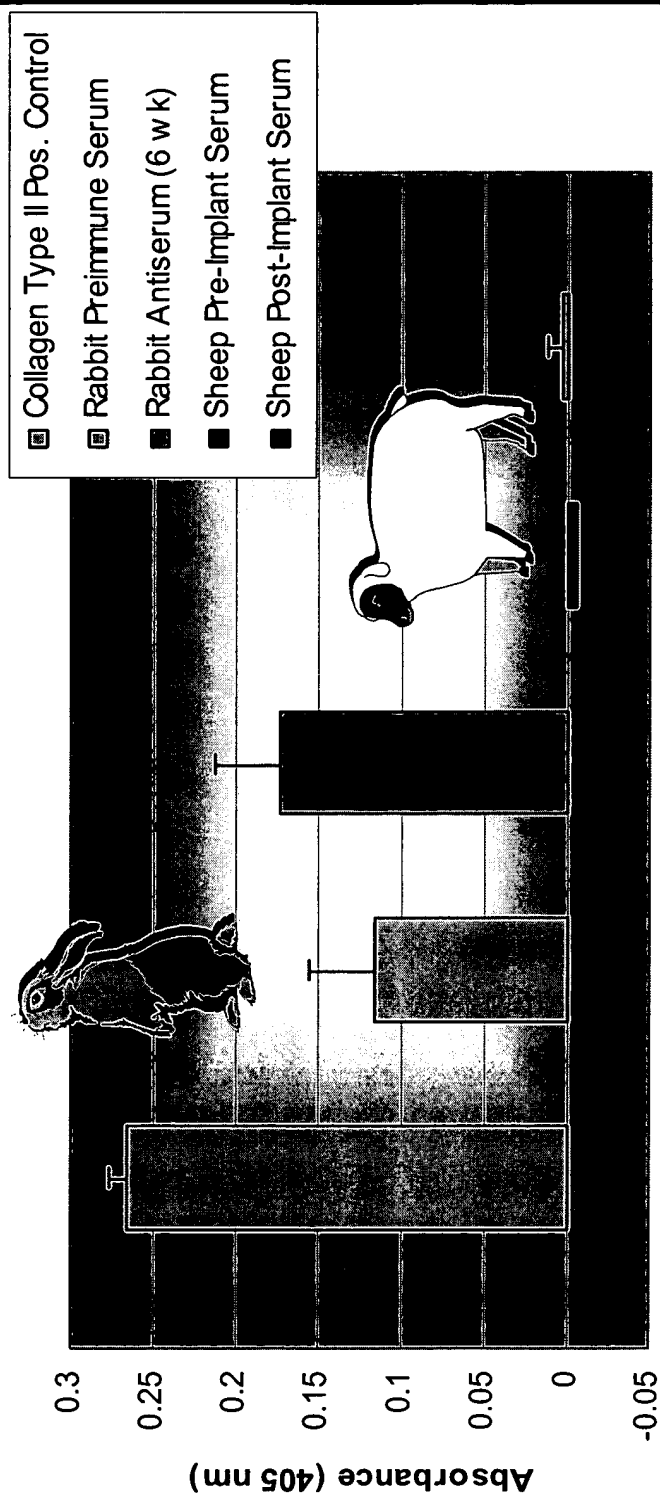
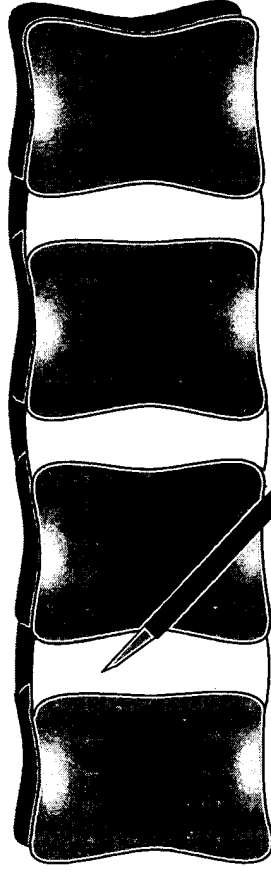
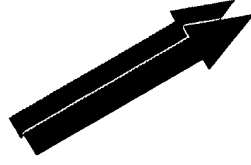


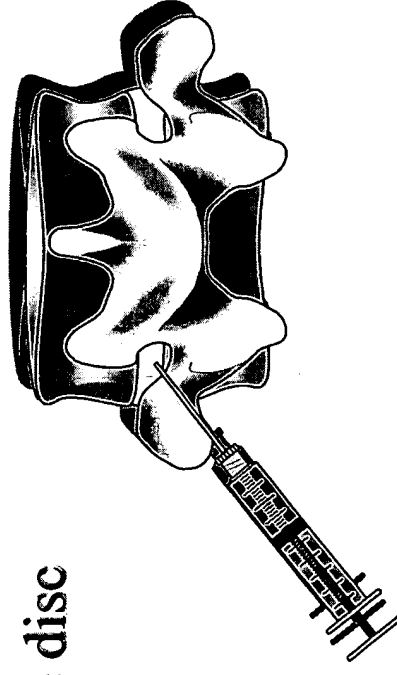
FIG. 10

1st operation: annulus stabs to create two degenerative discs

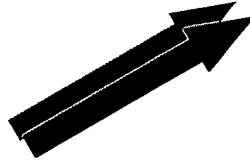


Wait 2 months

2nd operation: Cross-linked matrix/BP gel treatment injection to one disc



- Histomorphometry
- MRI/radiographs
- Immune response



Sacrifice: 2, 4, and 6 months

FIG. 11

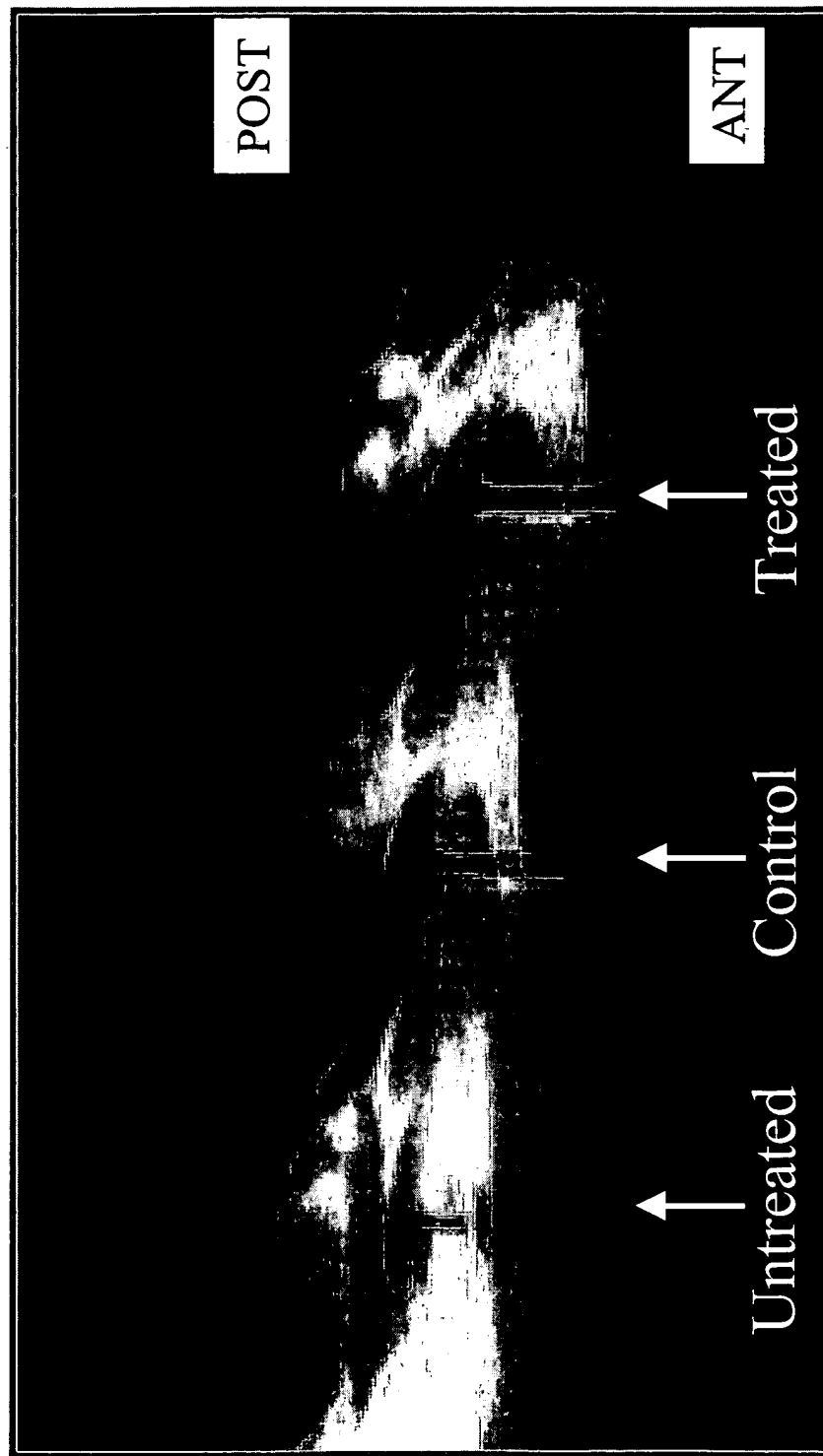
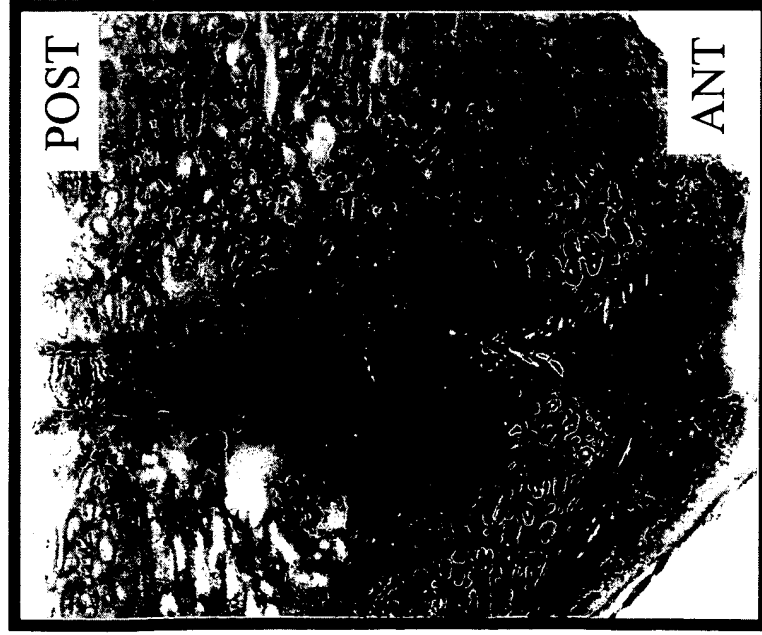
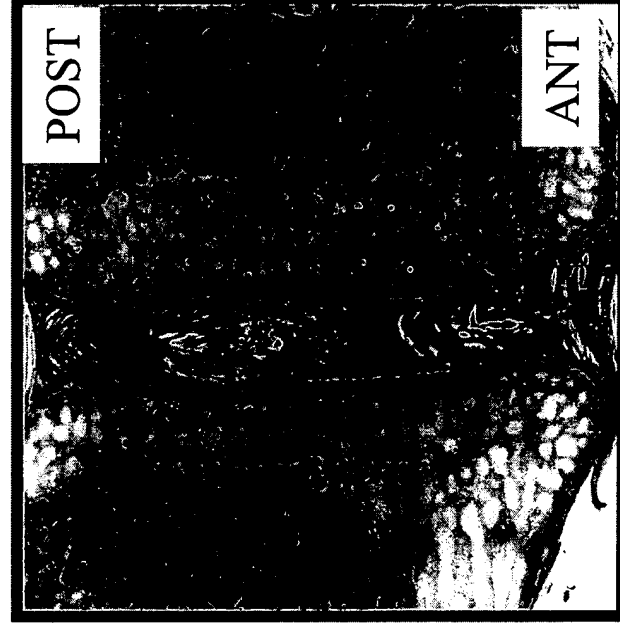


FIG. 12A



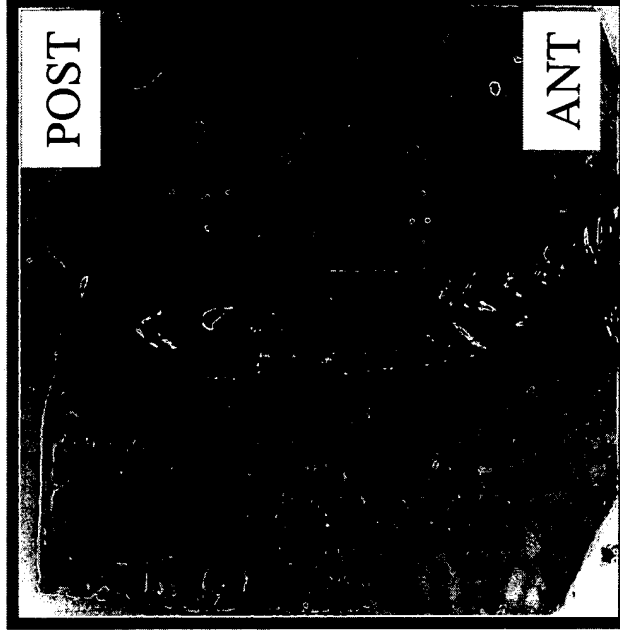
Untreated disc

FIG. 12B



Control

FIG. 12C



Treated disc

FIG. 13

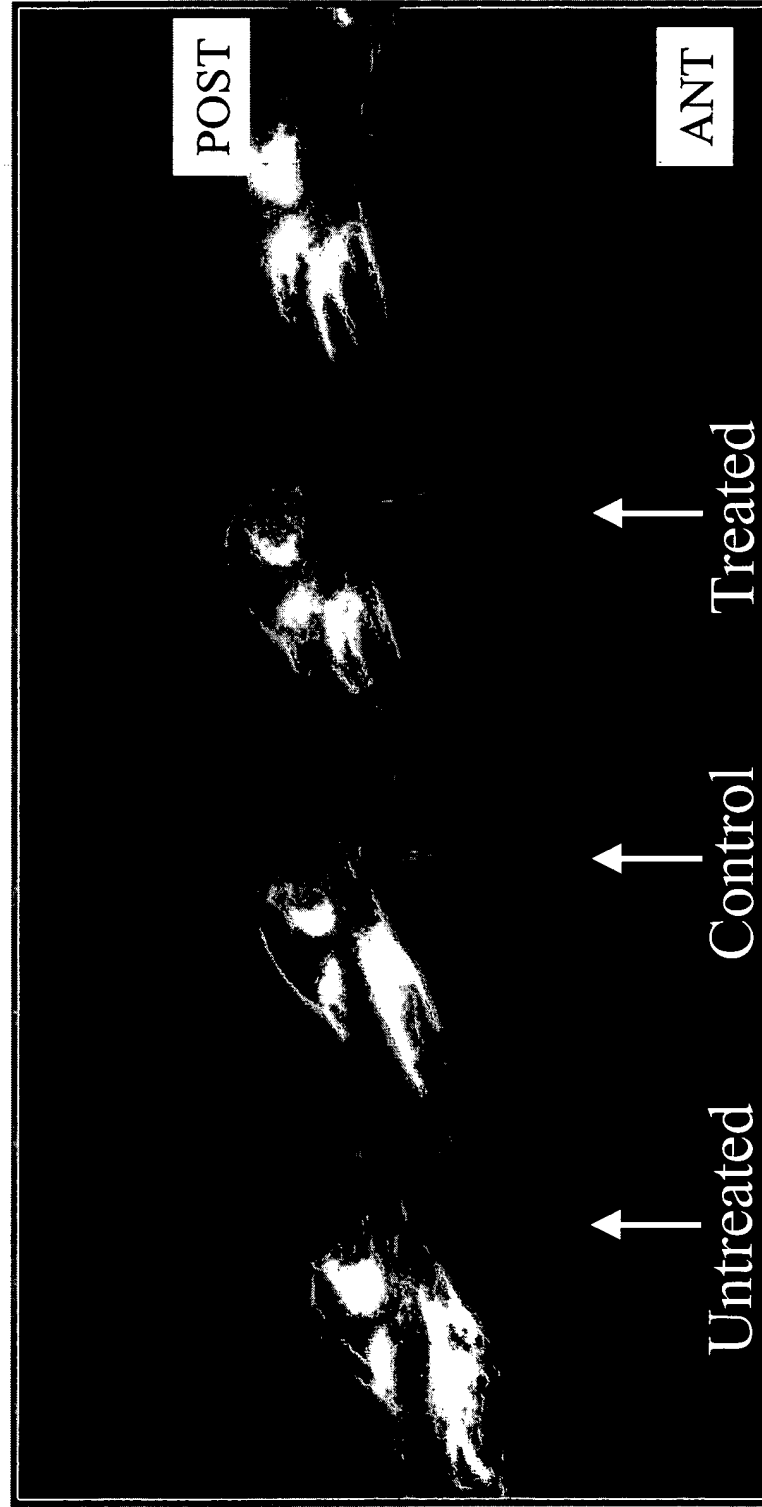


FIG. 14



Untreated

Control

Treated

FIG. 15A

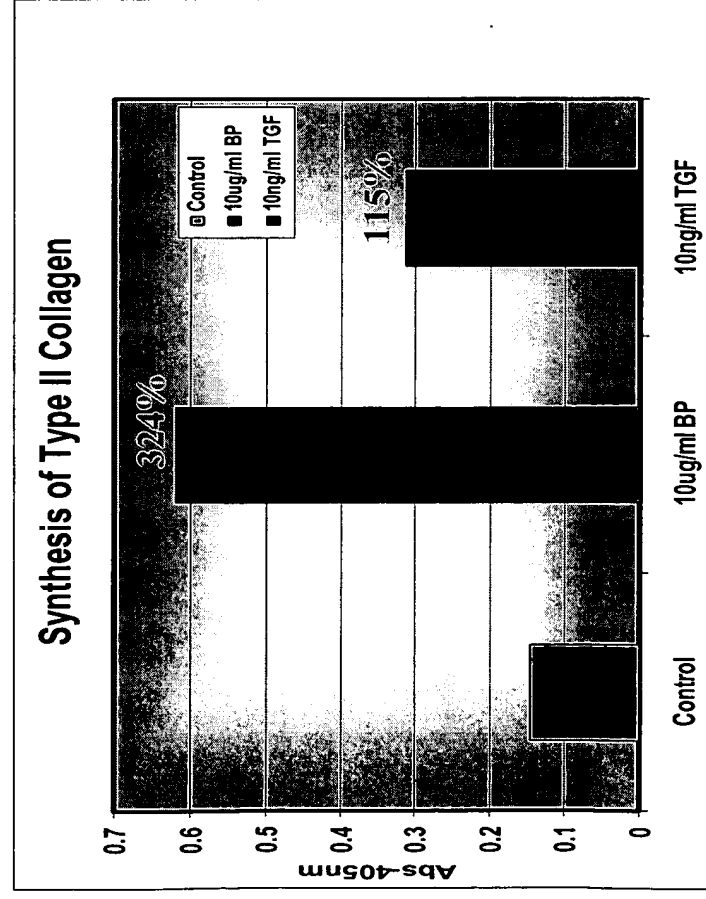


FIG. 15B

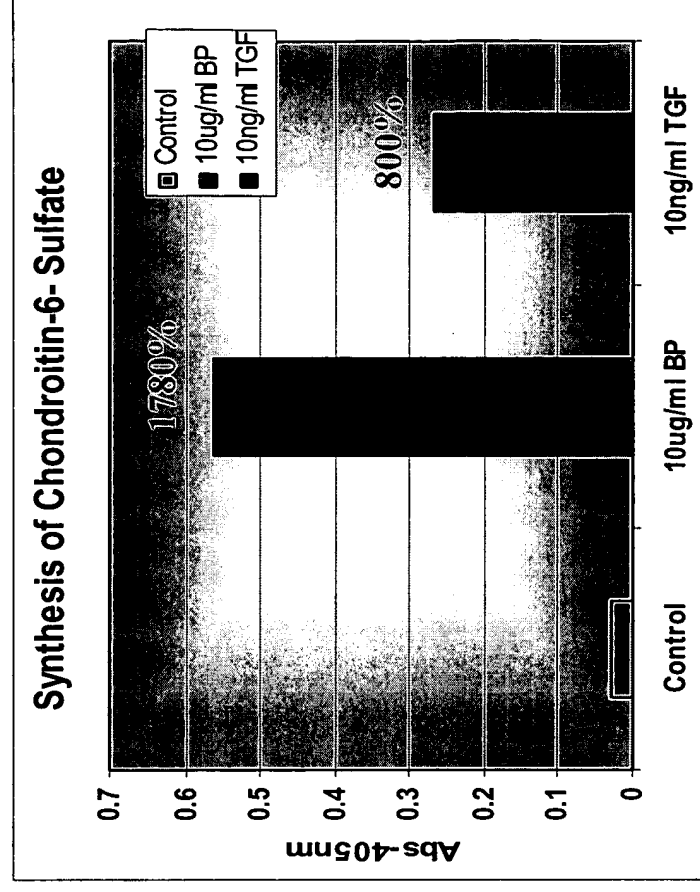


FIG. 16A

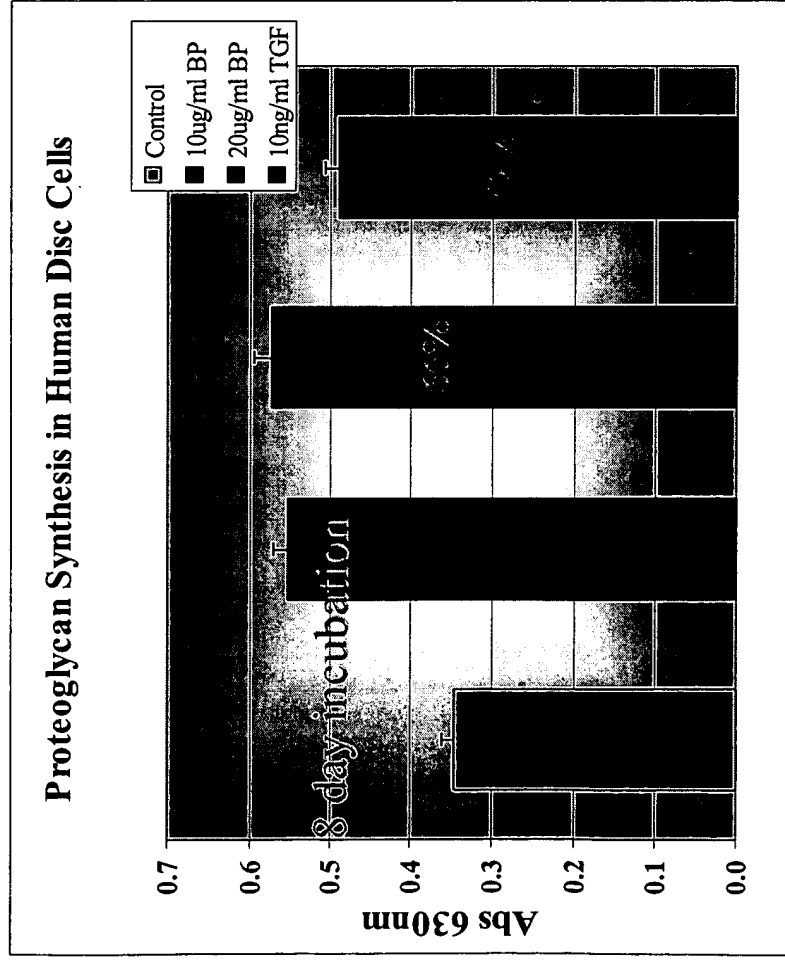


FIG. 16B

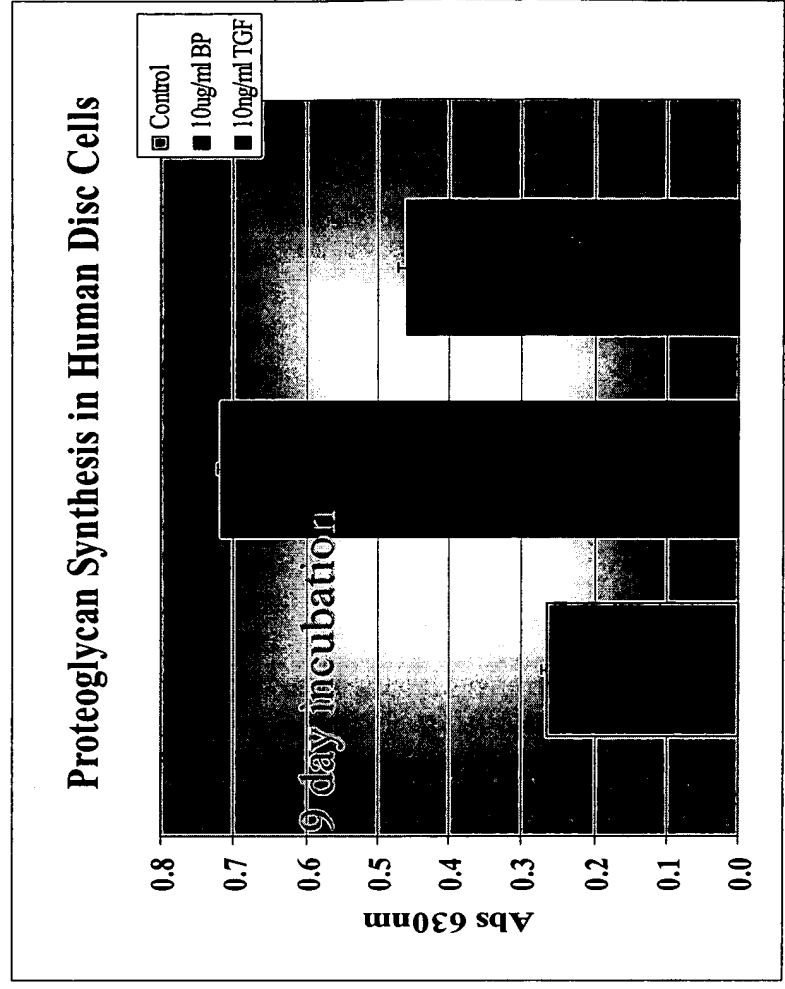


FIG. 17

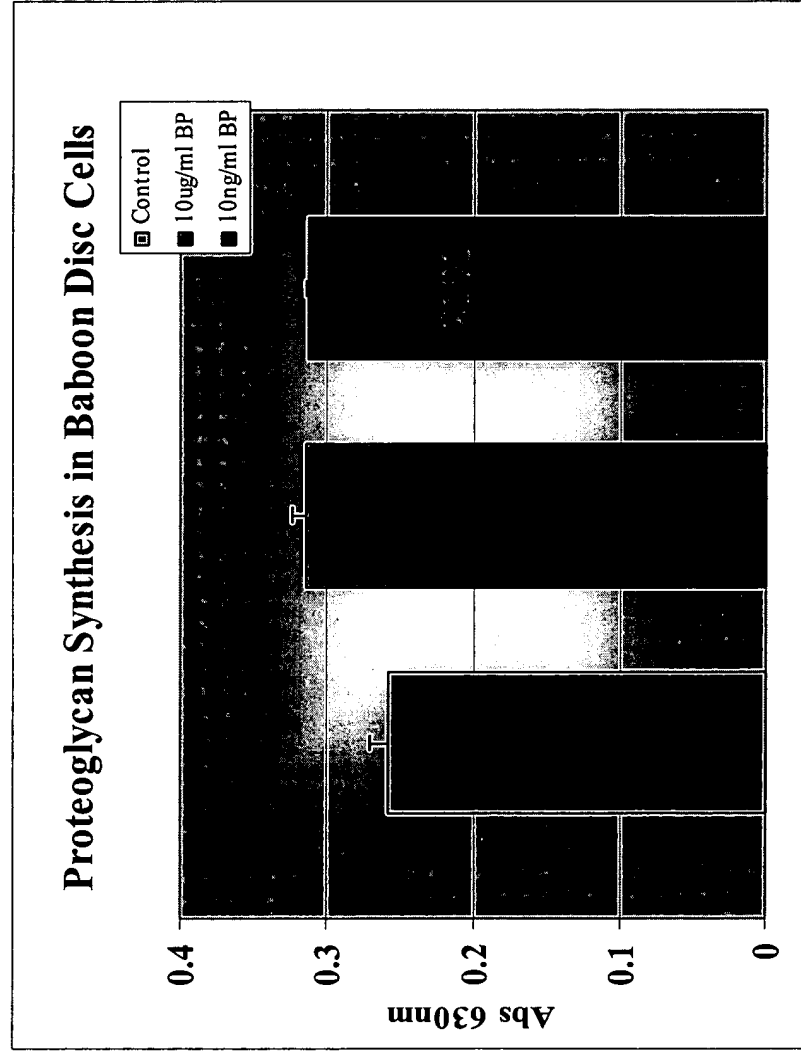


FIG. 18

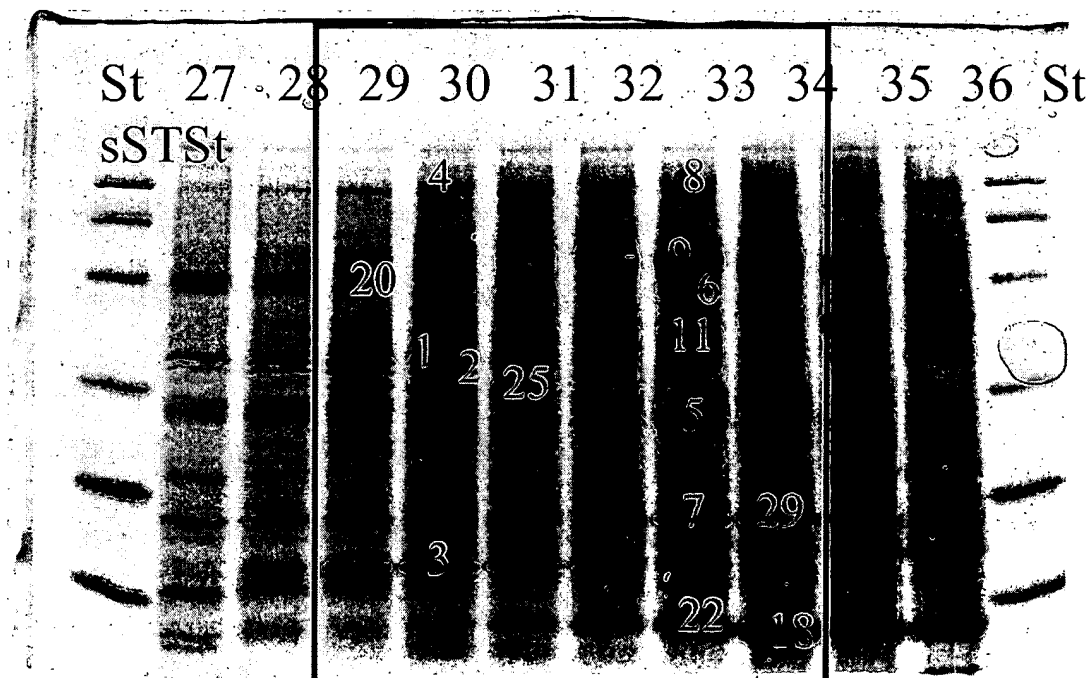
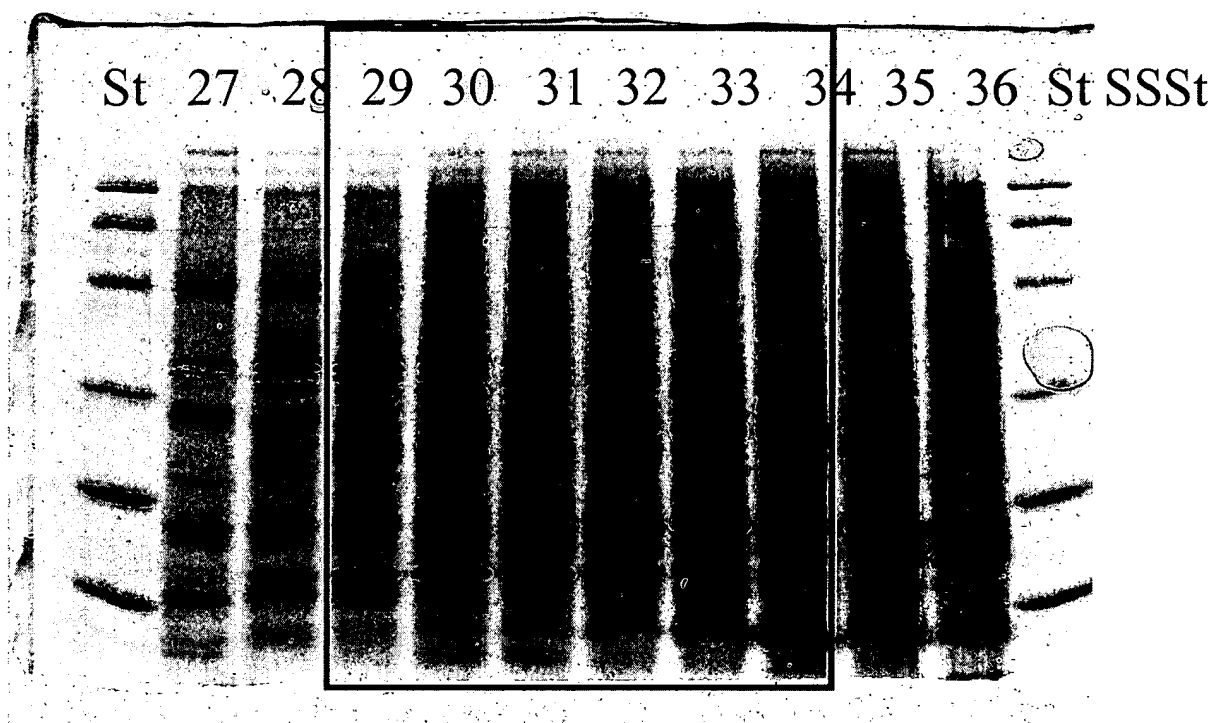
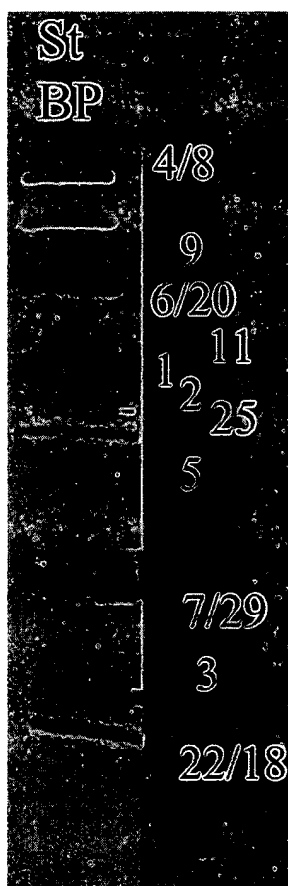


FIG. 19



Band No.	Identity
1	Histone H1.c
2	Histone H1.c
3	Ribosomal protein RS20
4	Similar to ribosomal protein LORP
5	BMP-3
6	α 2 macroglobulin RAP and BMP-3
7	Similar to ribosomal protein LORP
8	BMP-3
9	BMP-3
11	Ribosomal protein RL6 and BMP-3
18	TGF- β 2 / SPP 24
20	Factor H
22	TGF- β 2
25	BMP-3 and H1.x
29	BMP-3 and ribosomal protein RL32

FIG. 20

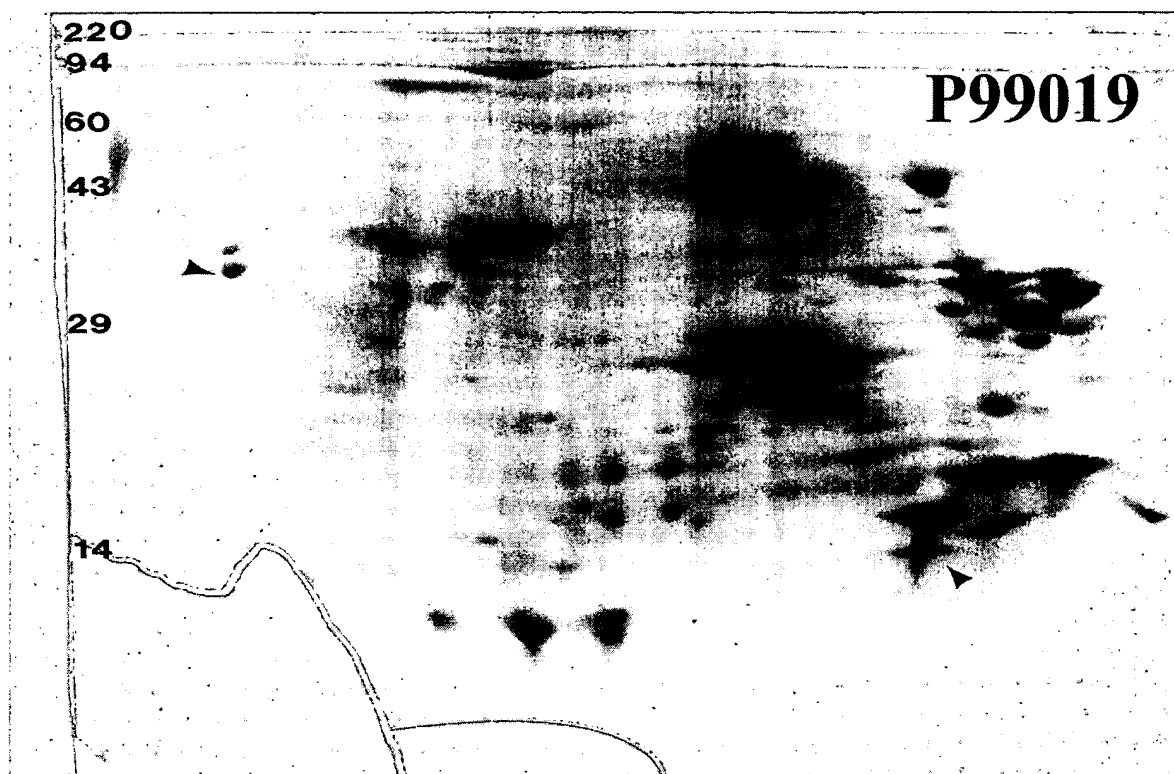


FIG. 21

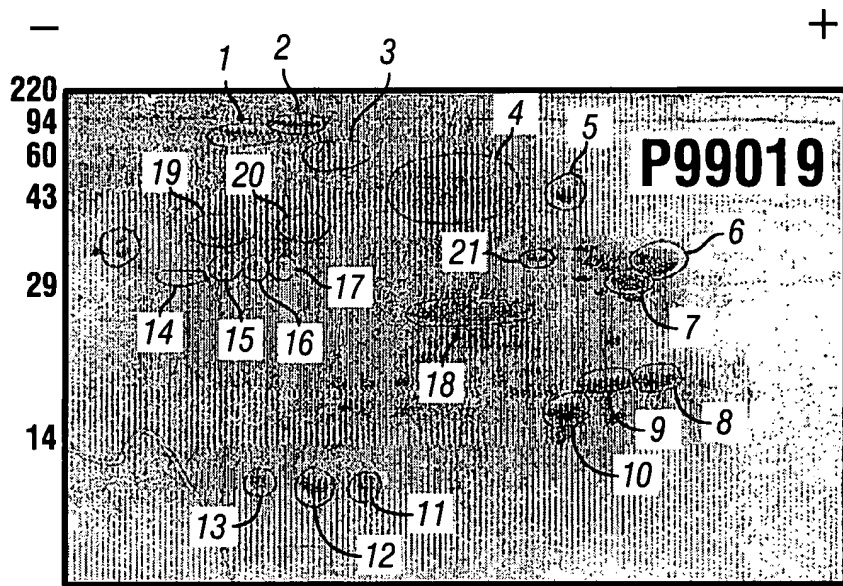


FIG. 22

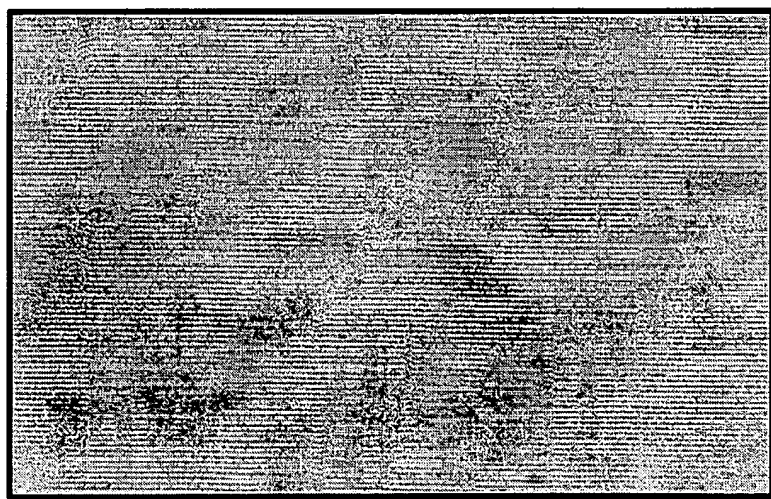
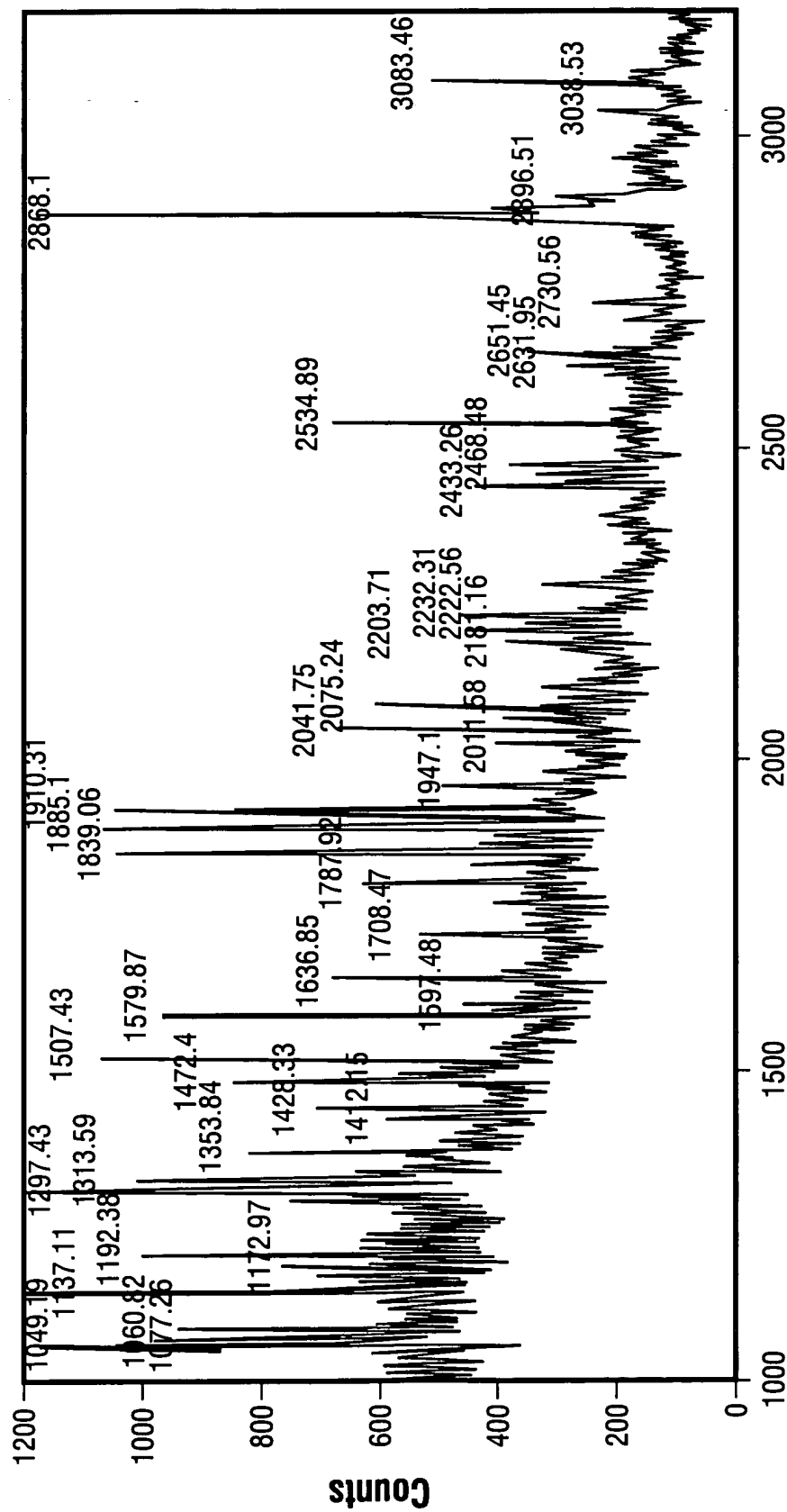


FIG. 24



Mass (m/z)

COMMENT: BARNES-1, TRYPSIN, 7.5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 20000

GRID VOLTAGE: 94.000 %

GUIDE WIRE VOLTAGE: 0.075 %

DELAY: 50 ON

LASER: 1965

SCANS AVERAGED: 256

PRESSURE: 1.70E-06

LOW MASS GATE: 500.0

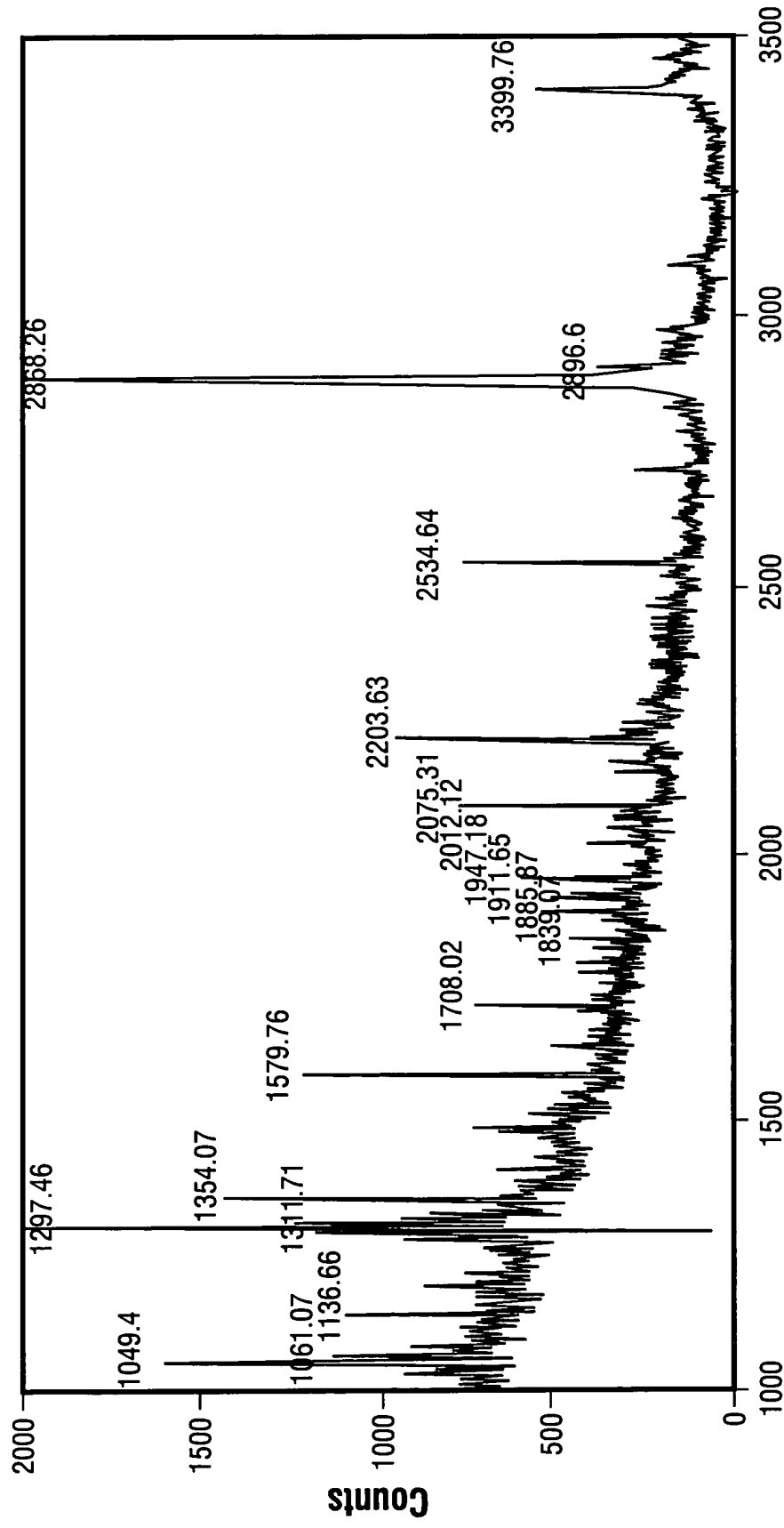
MIRROR RATIO: 1.060

PSD MIRROR RATIO:

TIMED ION SELECTOR: 16.1 OFF

NEGATIVE IONS: OFF

FIG. 23A (Band 1)



Mass (m/z)

COMMENT: BARNES-2, TRYPSIN, 7.5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 20000

LASER: 1965

MIRROR RATIO: 1.060

MODE: LINEAR

GRID VOLTAGE: 94.000 %

SCANS AVERAGED: 256

PSD MIRROR RATIO:

GUIDE WIRE VOLTAGE: 0.075 %

PRESSURE: 1.58E-06

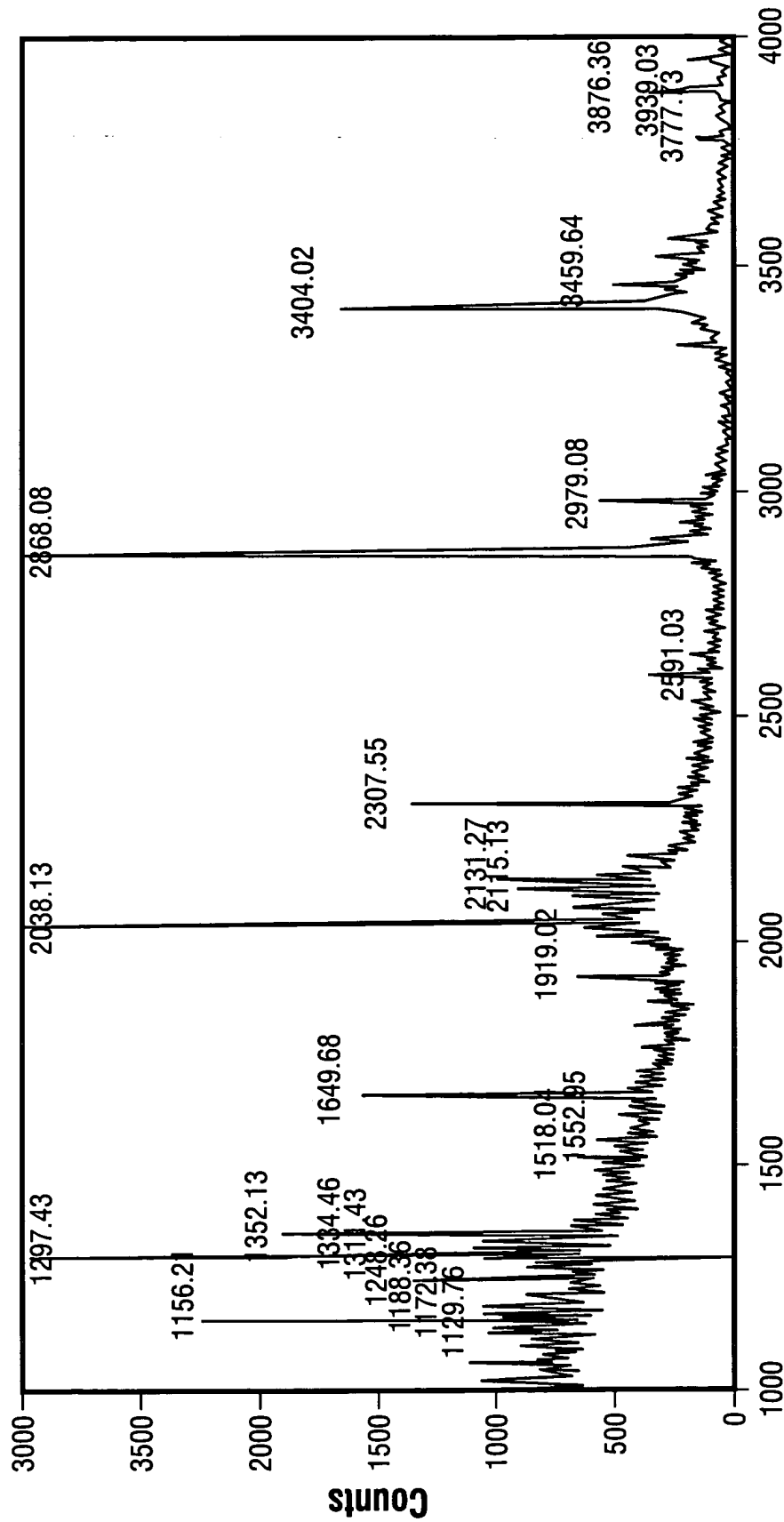
TIMED ION SELECTOR: 16.1 OFF

DELAY: 50 ON

LOW MASS GATE: 500.0

NEGATIVE IONS: OFF

FIG. 23B (Band 2)



Mass (m/z)

COMMENT: BARNES-3, TRYPSIN, 7.5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 20000

LASER: 1965

MIRROR RATIO: 1.060

MODE: LINEAR

GRID VOLTAGE: 94.000 %

SCANS AVERAGED: 256

PSD MIRROR RATIO:

GUIDE WIRE VOLTAGE: 0.075 %

PRESSURE: 1.5 E-06

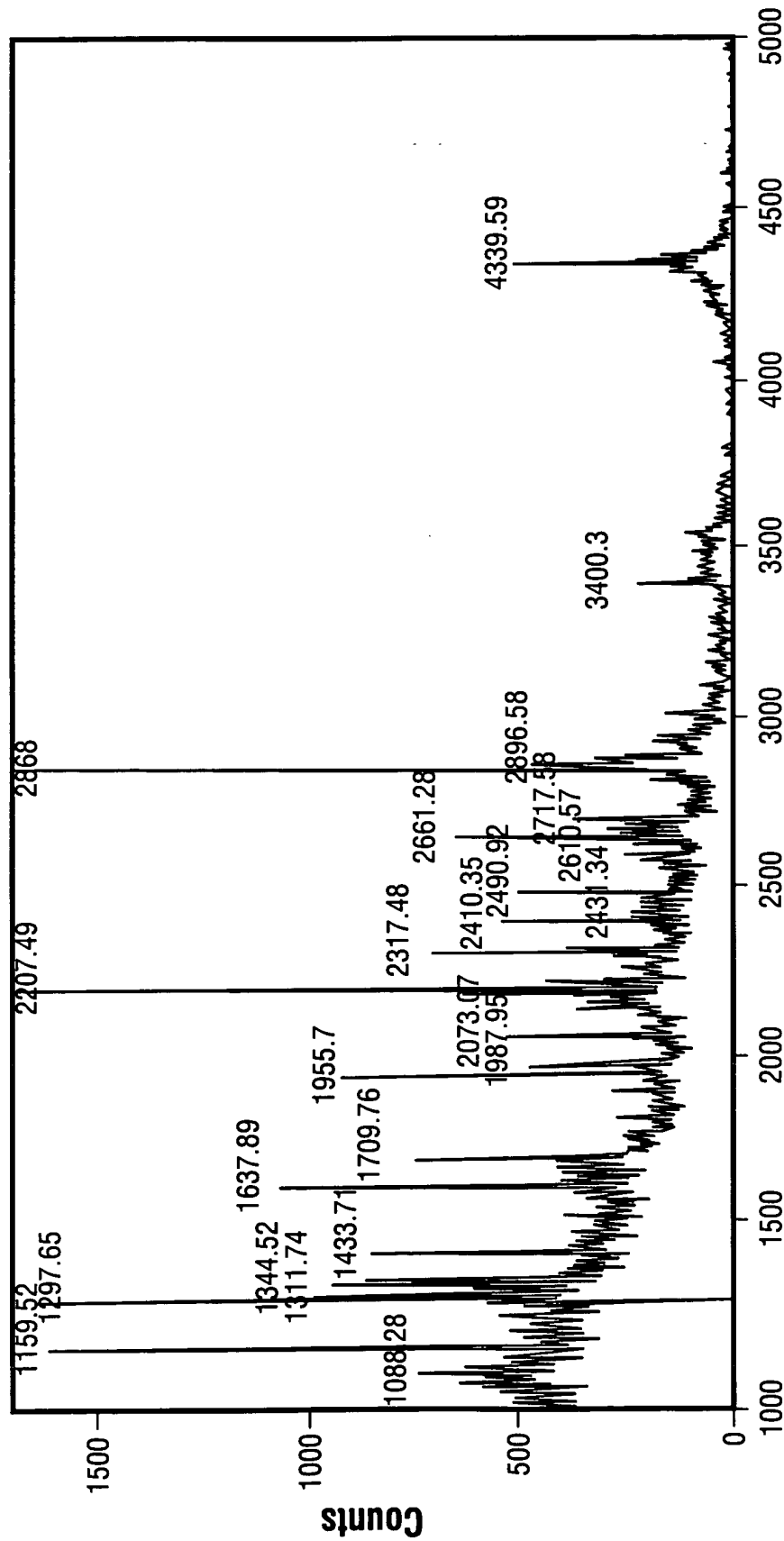
TIMED ION SELECTOR: 16.1 OFF

DELAY: 50 ON

LOW MASS GATE: 500.0

NEGATIVE IONS: OFF

FIG. 23C (Band 3)



Mass (m/z)

COMMENT: BARNES-4, TRYs, 5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 20000

LASER: 1965

MIRROR RATIO: 1.060

MODE: LINEAR

GRID VOLTAGE: 94.000 %

SCANS AVERAGED: 256

PSD MIRROR RATIO:

GUIDE WIRE VOLTAGE: 0.075 %

PRESSURE: 9.04E-07

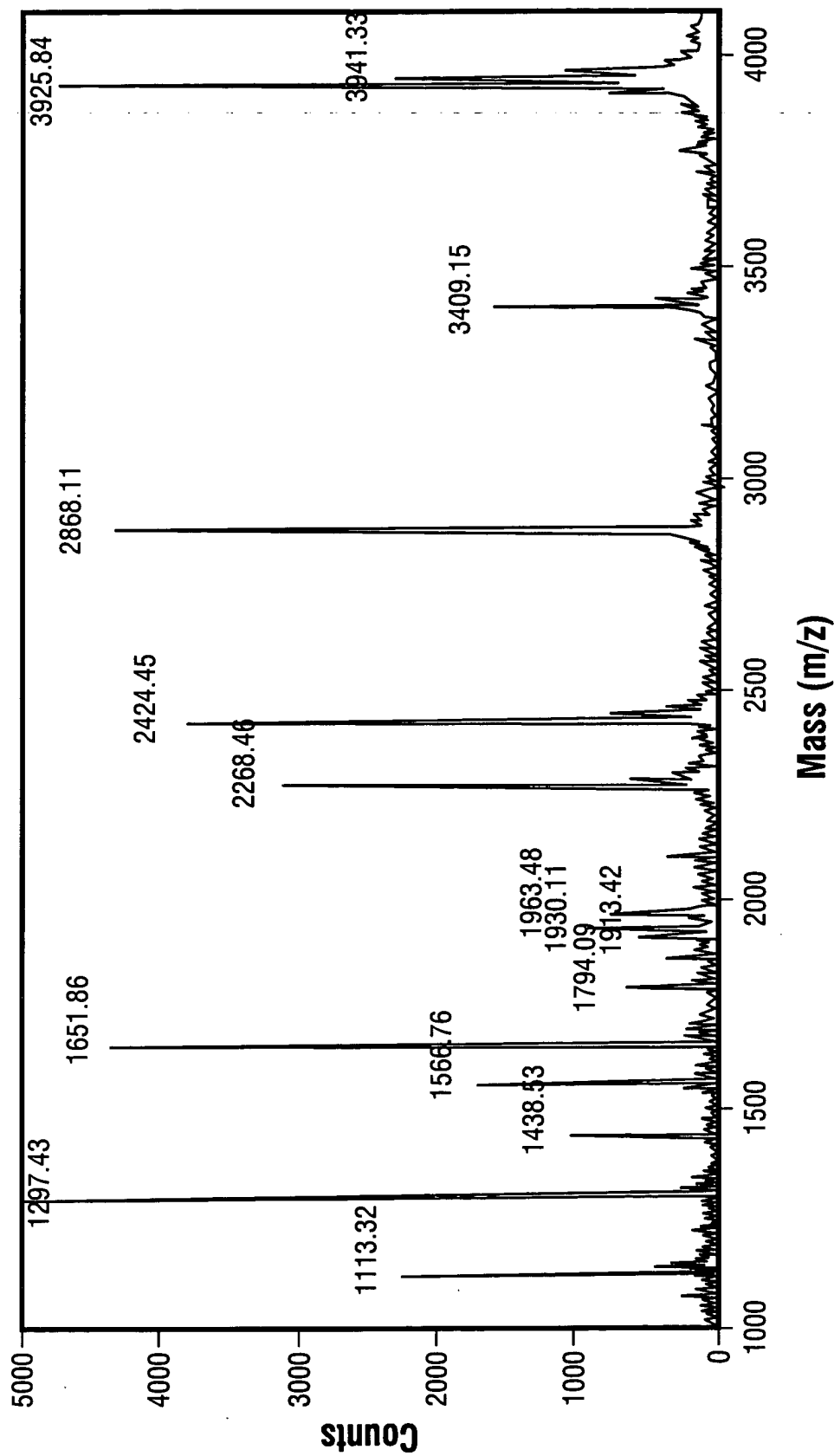
TIMED ION SELECTOR: 16.1 OFF

DELAY: 50 ON

LOW MASS GATE: 500.0

NEGATIVE IONS: OFF

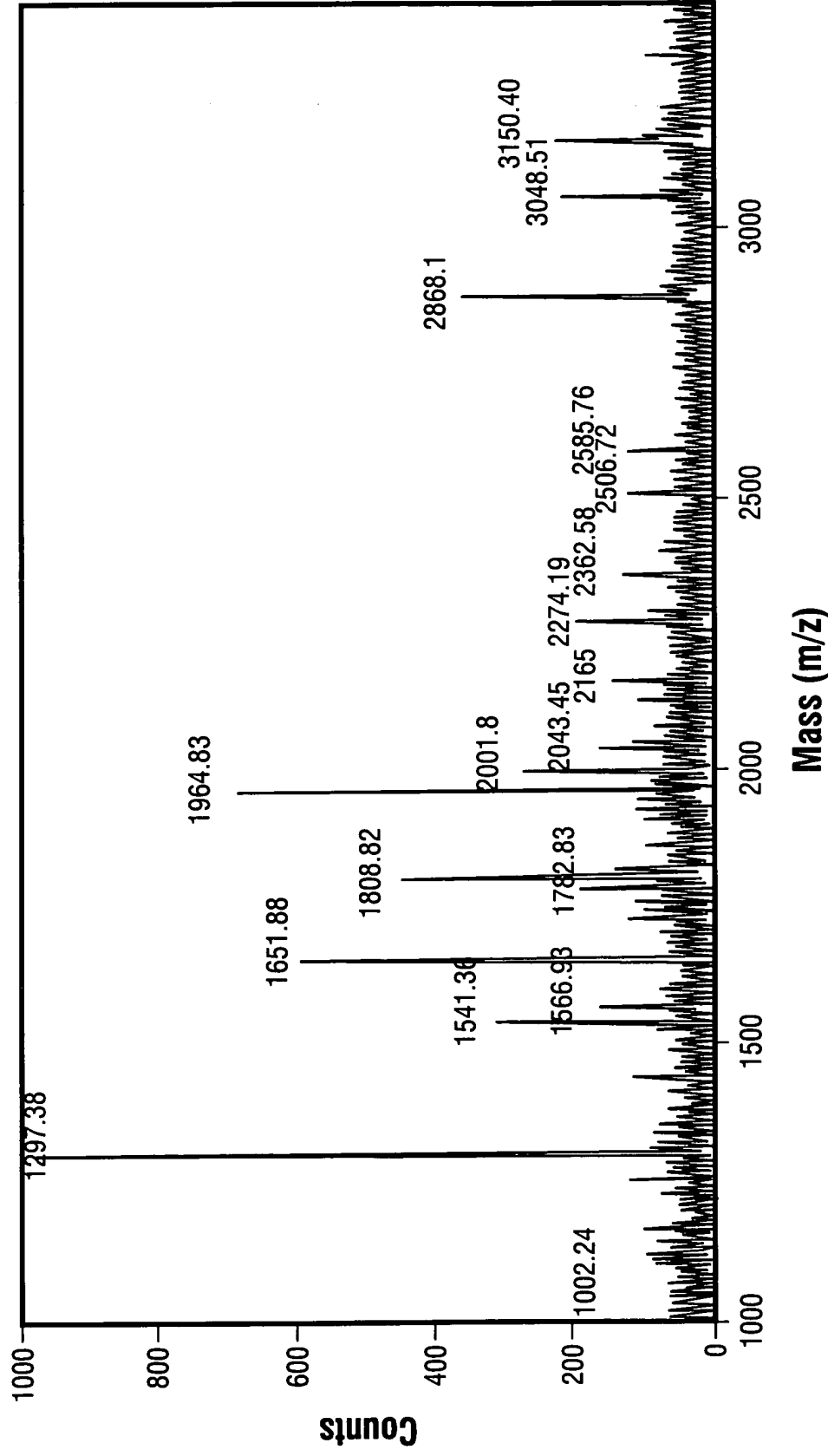
FIG. 23D (Band 4)



COMMENT: BARNES TRYPS #5

METHOD: LDE1000A	ACCELERATING VOLTAGE: 20000	LASER: 1965	MIRROR RATIO: 1.060
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 121	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.075 %	PRESSURE: 3.68E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

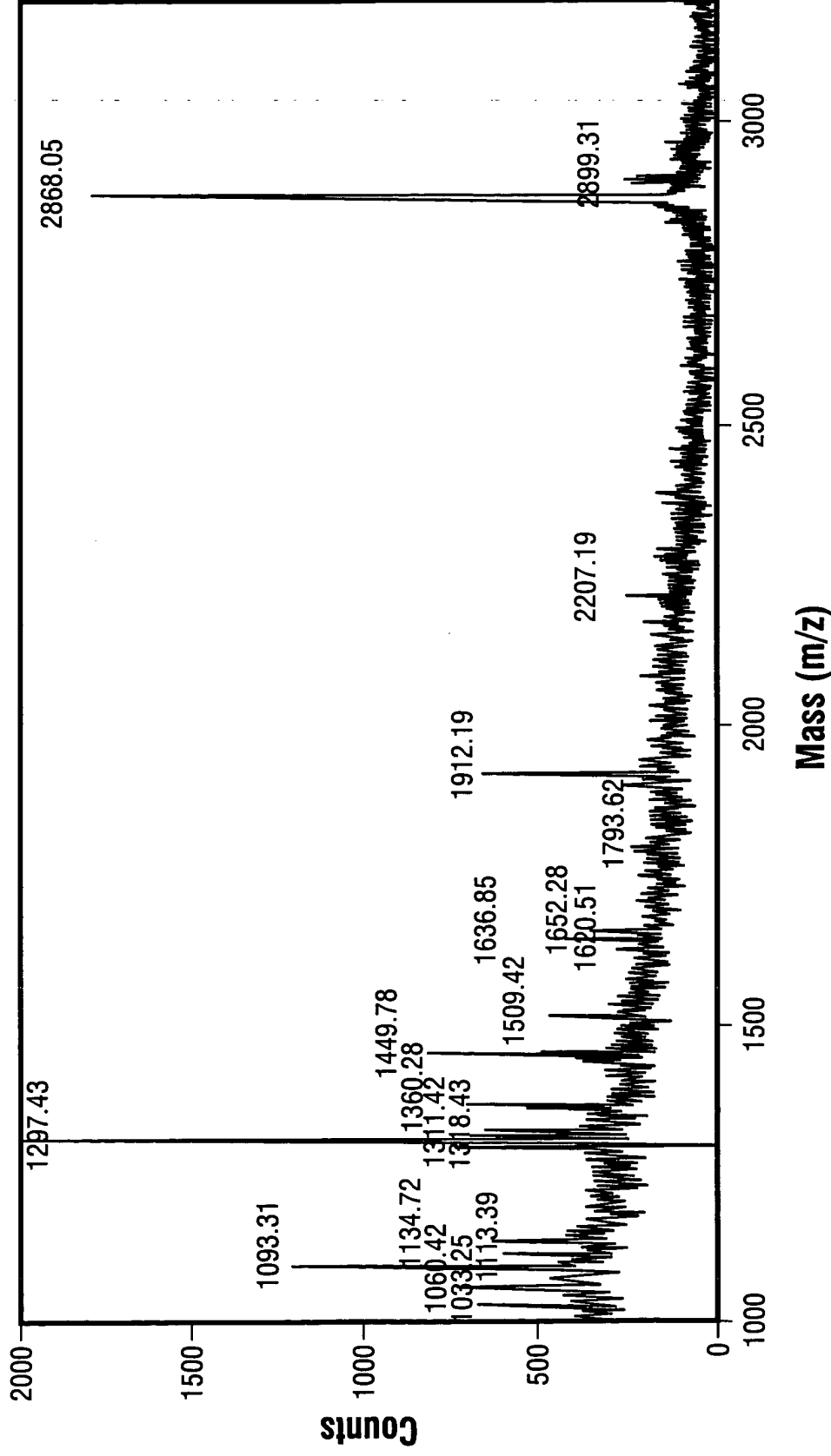
FIG. 23E (Band 5)



COMMENT: BARNES TRYPS #6

METHOD: LDE1000A	ACCELERATING VOLTAGE: 20000	LASER: 1965	MIRROR RATIO: 1.060
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 256	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.075 %	PRESSURE: 4.06E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

FIG. 23F (Band 6)



COMMENT: BARNES-7, TRYR, 7.5%

METHOD: LDE1000A

MODE: LINEAR

ACCELERATING VOLTAGE: 20000

GRID VOLTAGE: 94.000 %

GUIDE WIRE VOLTAGE: 0.075 %

DELAY: 50 ON

LASER: 1965

SCANS AVERAGED: 256

PRESSURE: 5.89E-07

LOW MASS GATE: 500.0

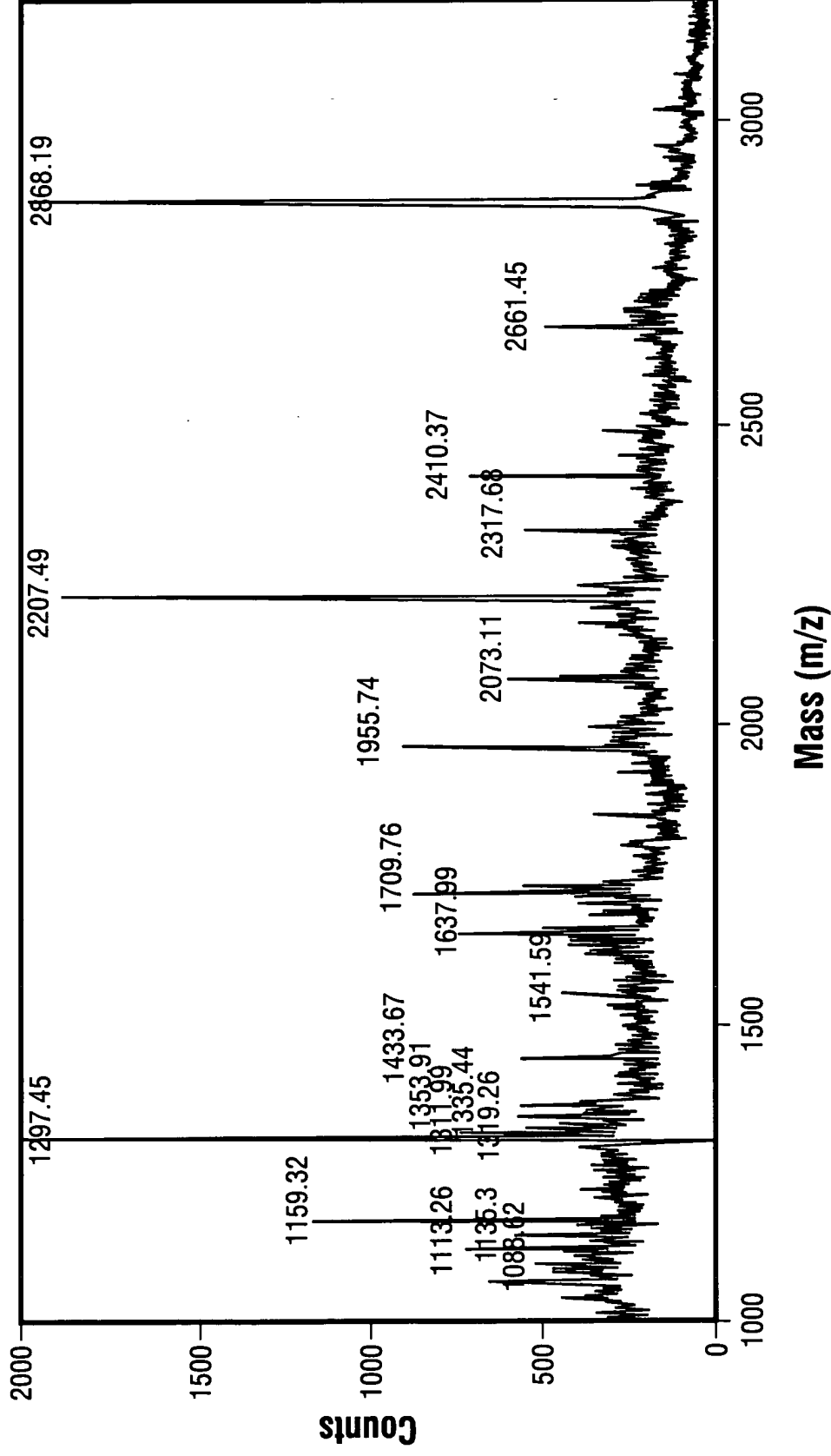
MIRROR RATIO: 1.060

PSD MIRROR RATIO:

TIMED ION SELECTOR: 16.1 OFF

NEGATIVE IONS: OFF

FIG. 23G (Band 7)



COMMENT: BARNES-8, TRYPSIN, 7.5%

METHOD: LDE1000A

MODE: LINEAR

ACCELERATING VOLTAGE: 20000

GRID VOLTAGE: 94.000 %

GUIDE WIRE VOLTAGE: 0.075 %

DELAY: 50 ON

LASER: 1965

SCANS AVERAGED: 256

PRESSURE: 4.01E-07

LOW MASS GATE: 500.0

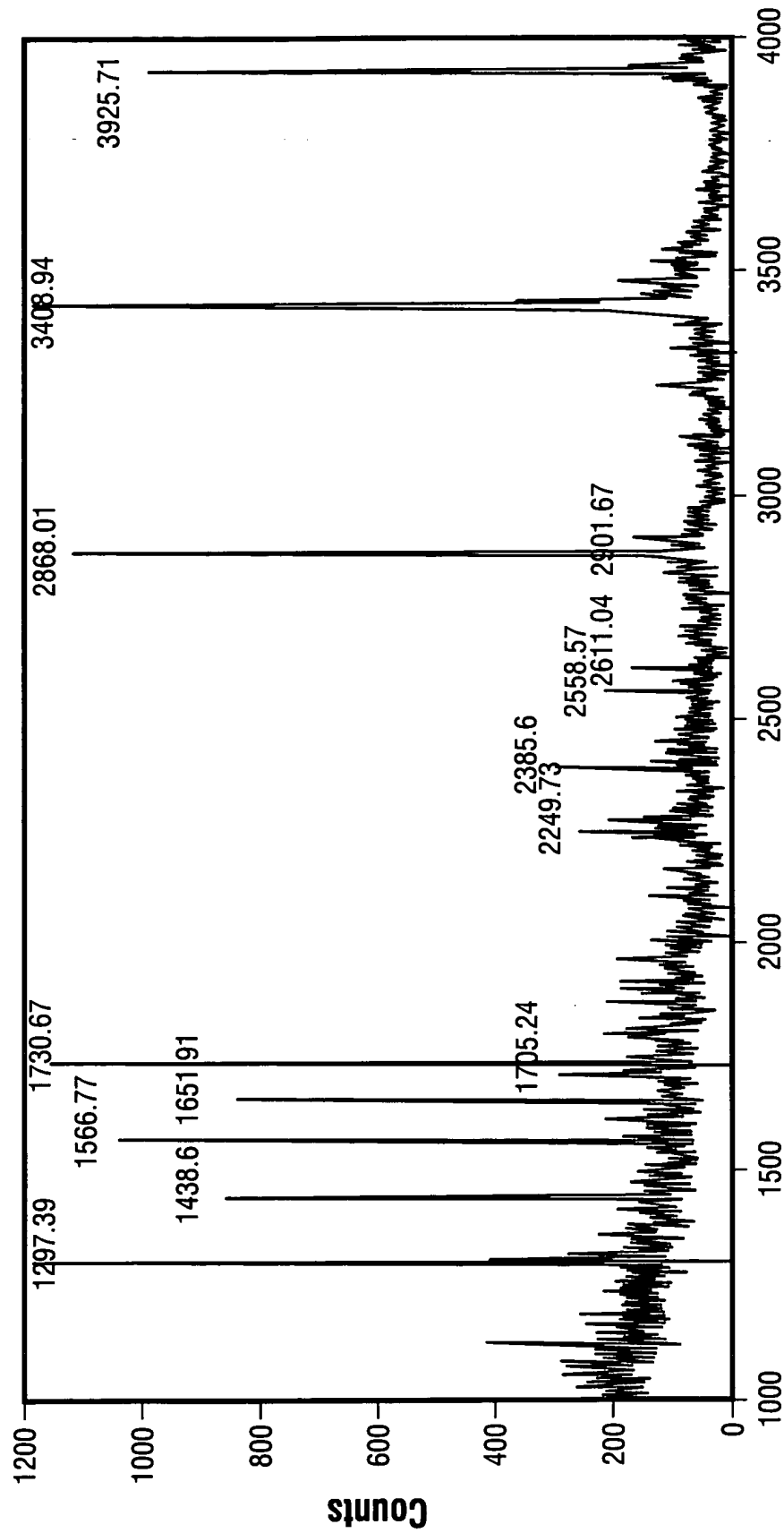
MIRROR RATIO: 1.060

PSD MIRROR RATIO:

TIMED ION SELECTOR: 16.1 OFF

NEGATIVE IONS: OFF

FIG. 23H (Band 8)



Mass (m/z)

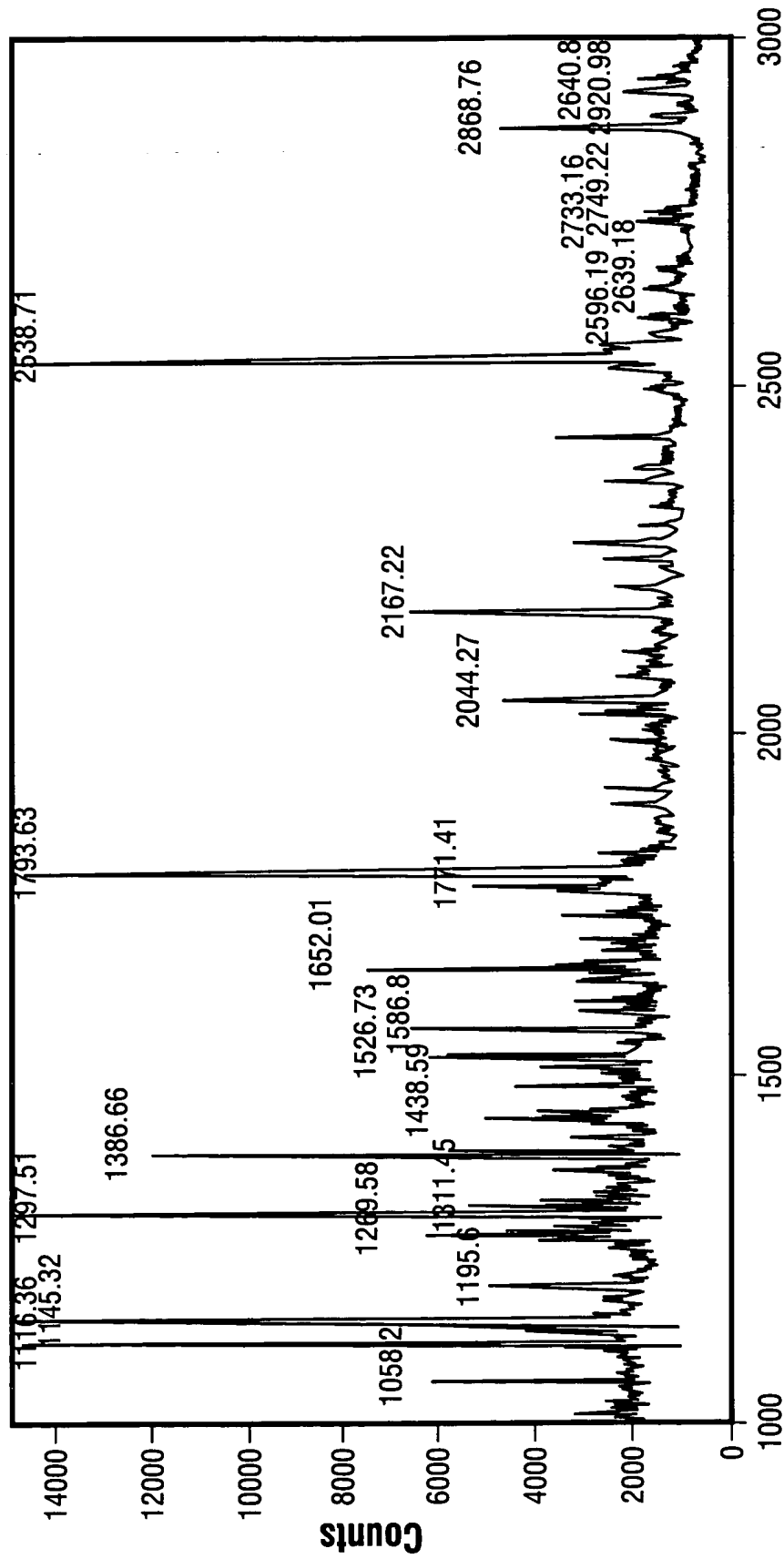
COMMENT: BARNES-B9, TRYPMOD., 7.5%

METHOD: LDE1000A ACCELERATING VOLTAGE: 20000
MODE: LINEAR GRID VOLTAGE: 94.000 %
GUIDE WIRE VOLTAGE: 0.090 %
DELAY: 50 ON

MIRROR RATIO: 1.080
PSD MIRROR RATIO:
TIMED ION SELECTOR: 16.1 OFF
NEGATIVE IONS: OFF

LASER: 1860
SCANS AVERAGED: 256
PRESSURE: 3.27E-07
LOW MASS GATE: 500.0

FIG. 23I (Band 9)

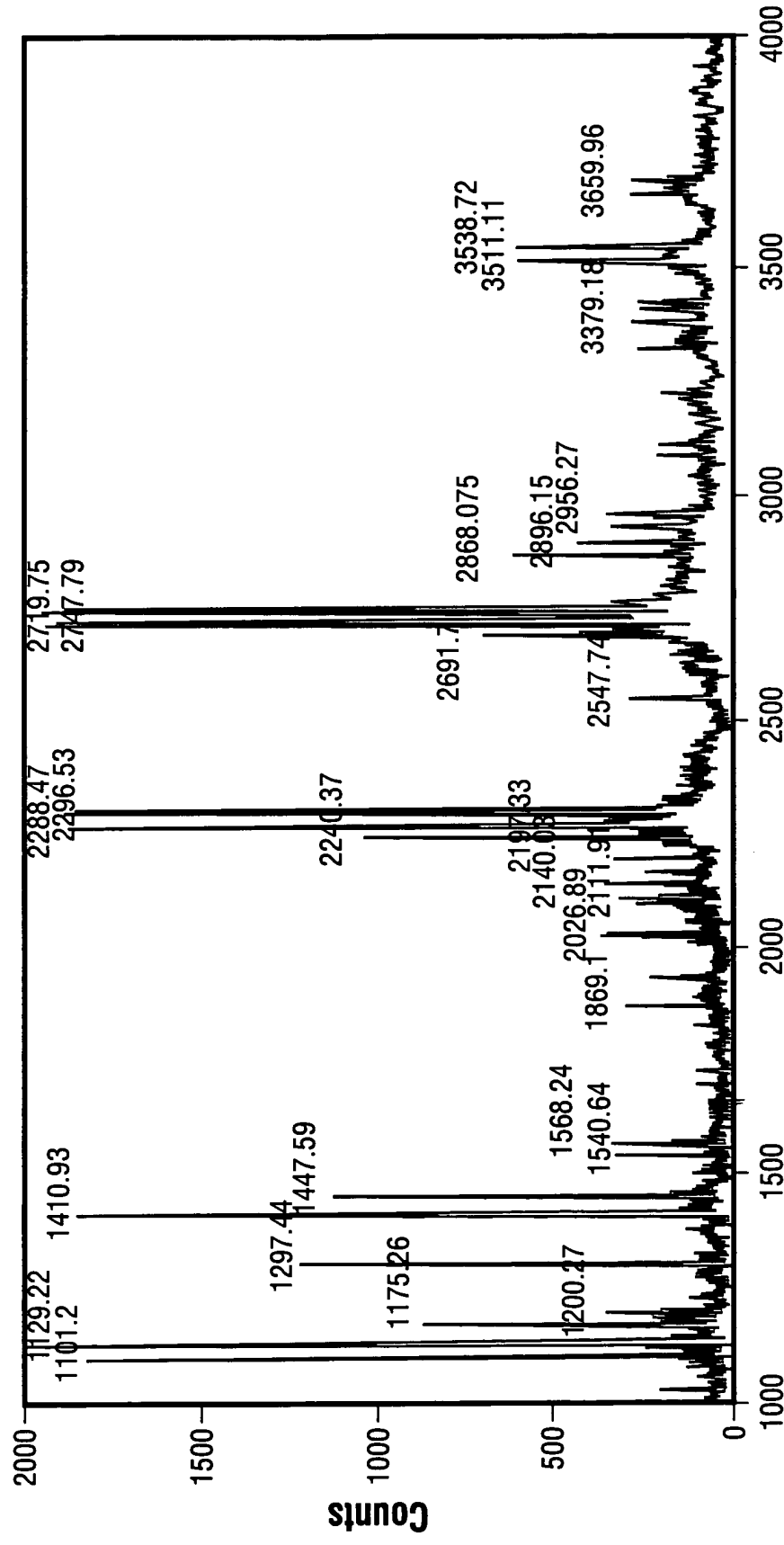


Mass (m/z)

COMMENT: BARNES-11, TRYP, 7.5%

METHOD: LDE1000A	ACCELERATING VOLTAGE: 25000	LASER: 1965	MIRROR RATIO: 1.080
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 256	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.090 %	PRESSURE: 5.84E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

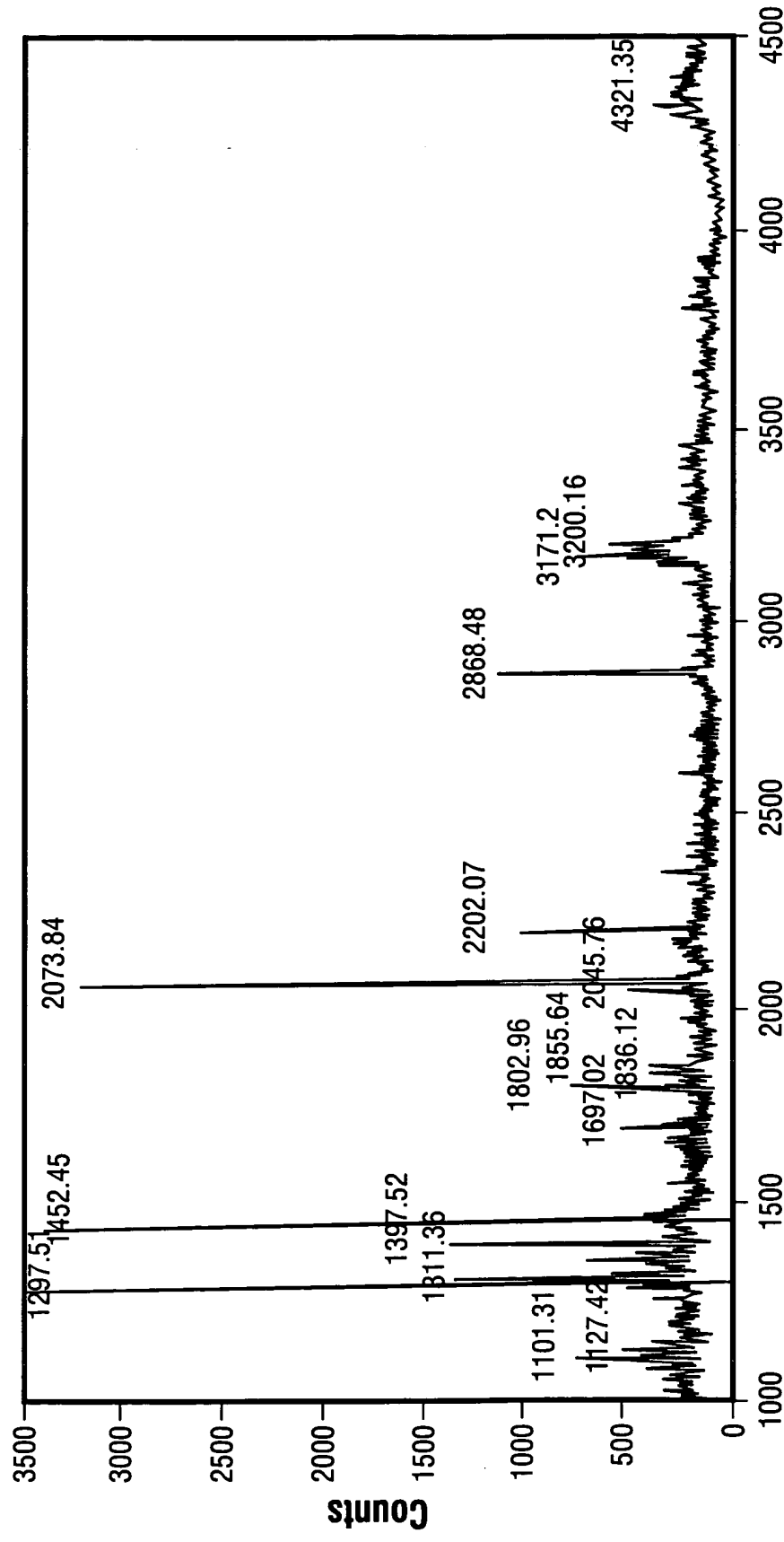
FIG. 23J (Band 11)



COMMENT: BARNES-18, TRYP, 7.5%

METHOD: LDE1000A	ACCELERATING VOLTAGE: 25000	LASER: 1745	MIRROR RATIO: 1.080
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 256	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.090 %	PRESSURE: 2.90E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

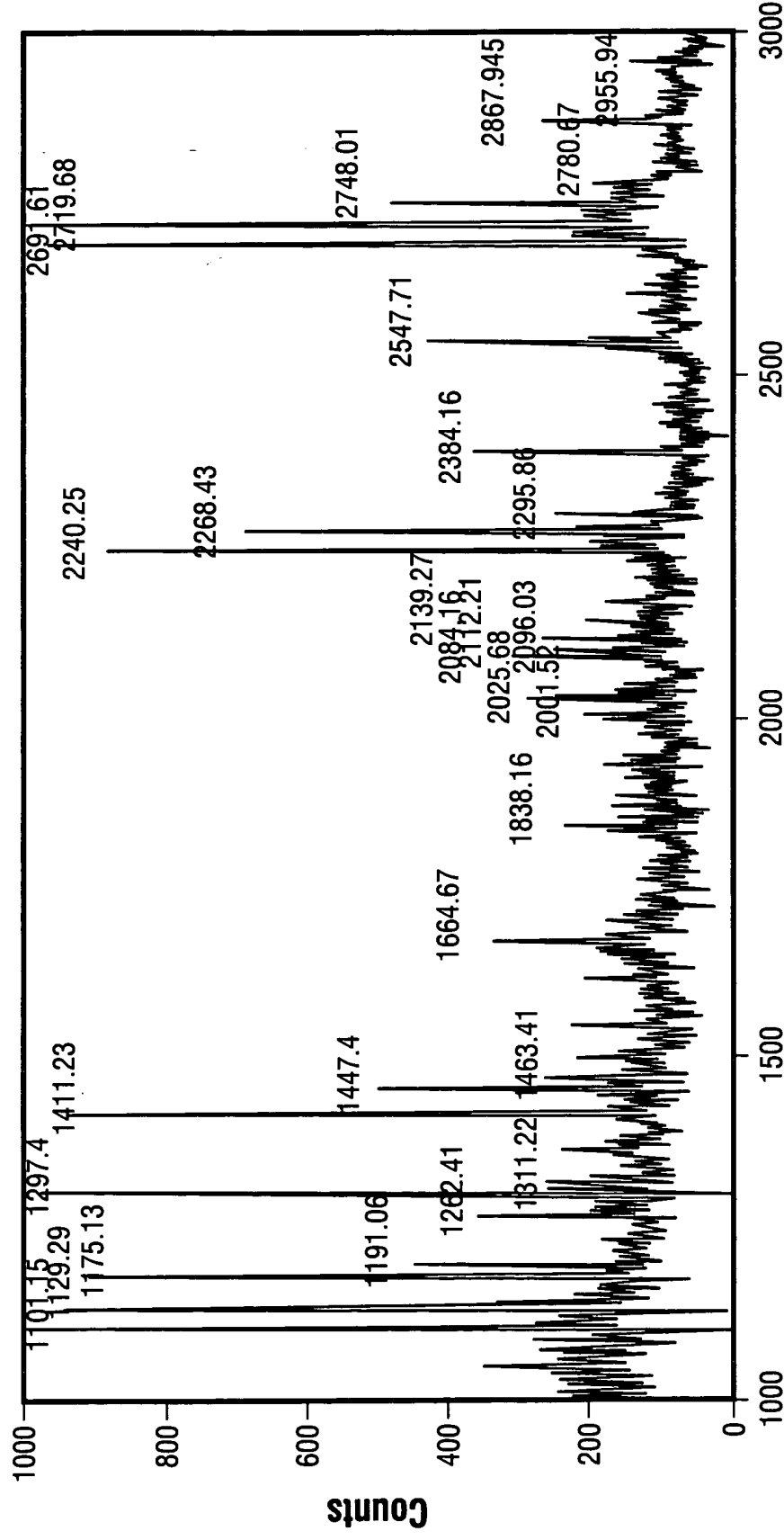
FIG. 23K (Band 18)



COMMENT: BARNES-20, TRYP, 7.5%

METHOD: LDE1000A	ACCELERATING VOLTAGE: 25000	LASER: 1820	MIRROR RATIO: 1.080
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 256	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.090 %	PRESSURE: 9.21E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

FIG. 23L (Band 20)



Mass (m/z)

COMMENT: BARNES-22, MOD.TRYP., 7.5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 25000

LASER: 1870

MIRROR RATIO: 1.080

MODE: LINEAR

GRID VOLTAGE: 94.000 %

SCANS AVERAGED: 231

PSD MIRROR RATIO:

GUIDE WIRE VOLTAGE: 0.090 %

PRESSURE: 3.43E-06

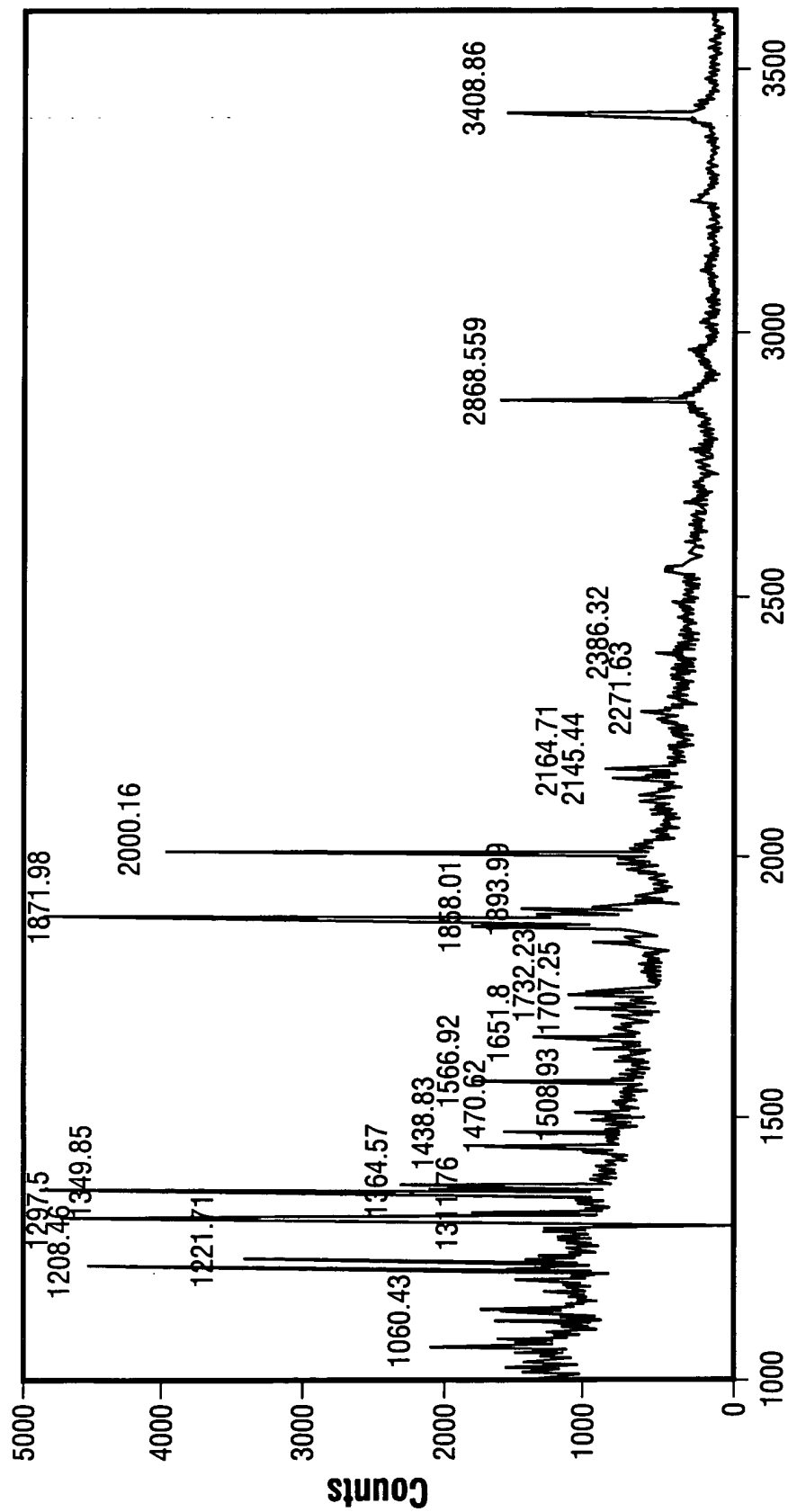
TIMED ION SELECTOR: 16.1 OFF

DELAY: 50 ON

LOW MASS GATE: 500.0

NEGATIVE IONS: OFF

FIG. 23M (Band 22)



Mass (m/z)

COMMENT: BARNES-25, TRYP MODIFIED, 7.5%

METHOD: LDE1000A

ACCELERATING VOLTAGE: 25000

LASER: 1860

MIRROR RATIO: 1.080

MODE: LINEAR

GRID VOLTAGE: 94.000 %

SCANS AVERAGED: 256

PSD MIRROR RATIO:

GUIDE WIRE VOLTAGE: 0.090 %

PRESSURE: 9.26E-07

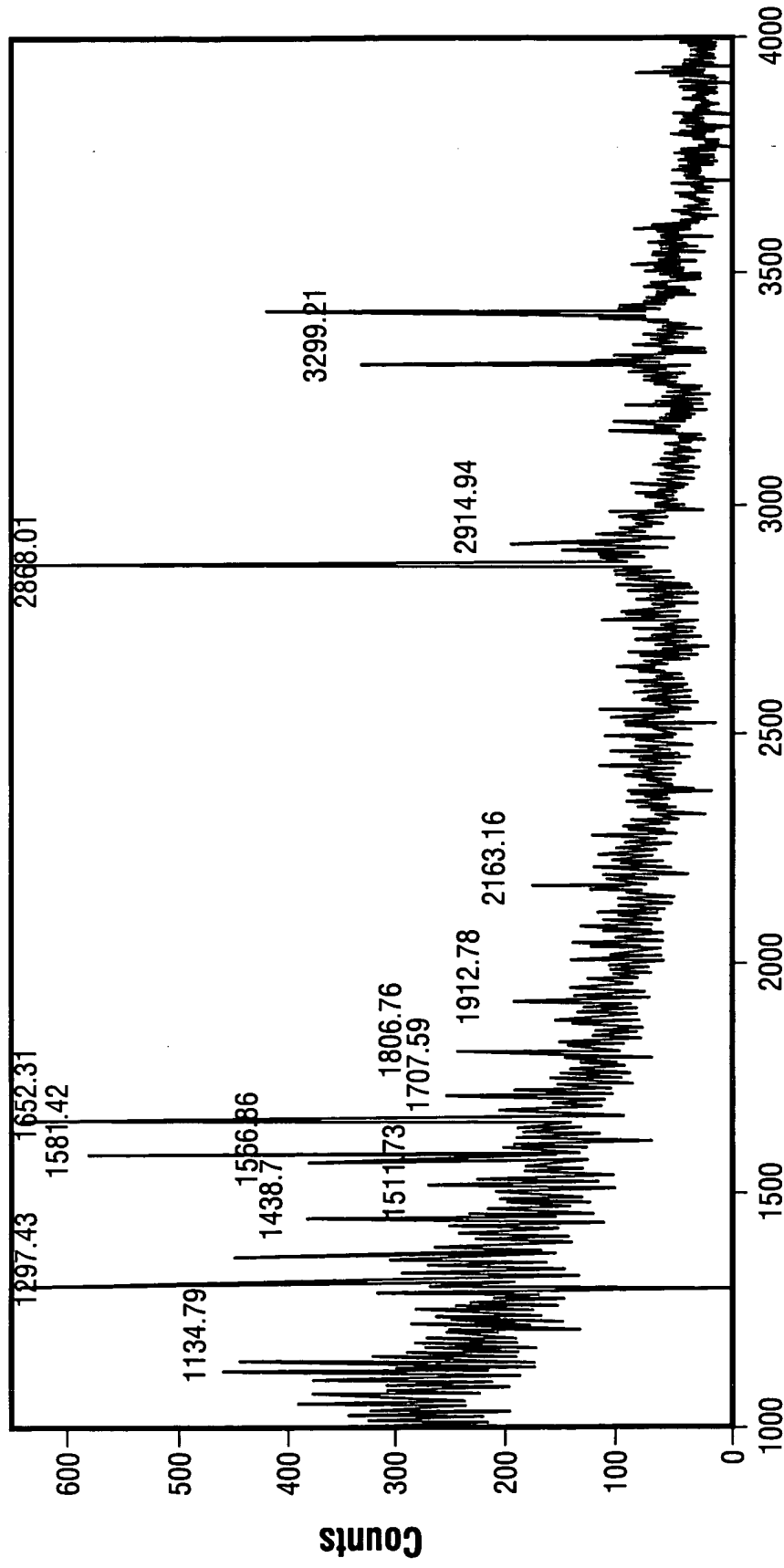
TIMED ION SELECTOR: 16.1 OFF

DELAY: 50 ON

LOW MASS GATE: 500.0

NEGATIVE IONS: OFF

FIG. 23N (Band 25)



COMMENT: BARNES-29, TRYPMOD., 7.5%

METHOD: LDE1000A	ACCELERATING VOLTAGE: 25000	LASER: 1860	MIRROR RATIO: 1.080
MODE: LINEAR	GRID VOLTAGE: 94.000 %	SCANS AVERAGED: 256	PSD MIRROR RATIO:
	GUIDE WIRE VOLTAGE: 0.090 %	PRESSURE: 3.82E-07	TIMED ION SELECTOR: 16.1 OFF
	DELAY: 50 ON	LOW MASS GATE: 500.0	NEGATIVE IONS: OFF

FIG. 230 (Band 29)

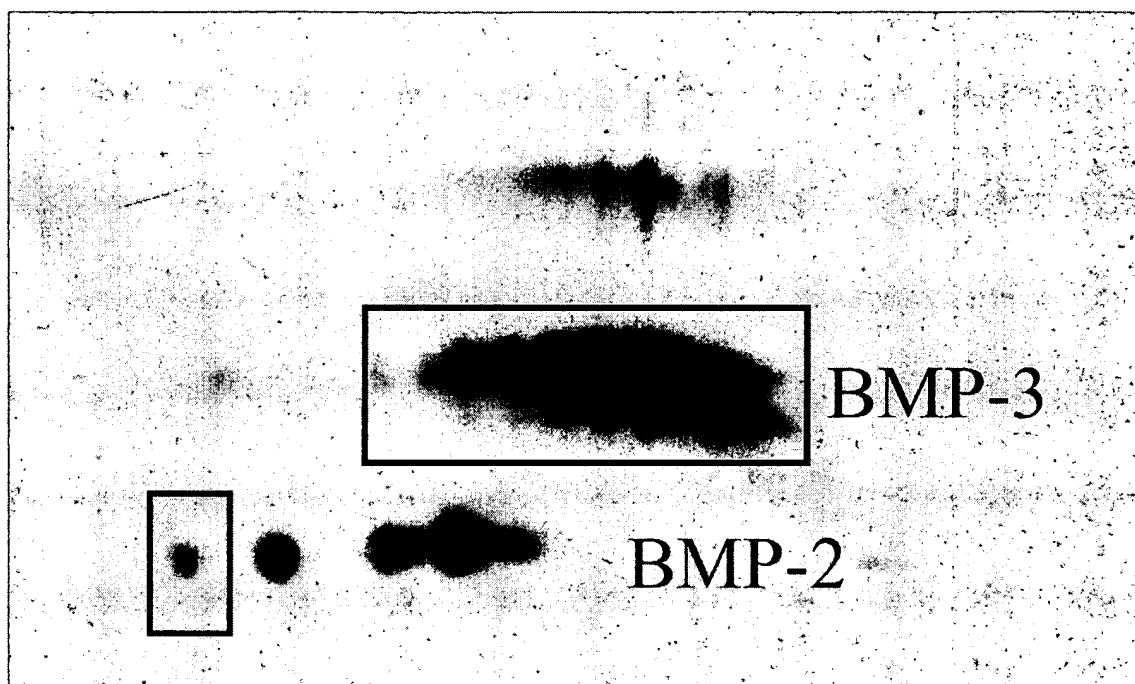


FIG. 25A

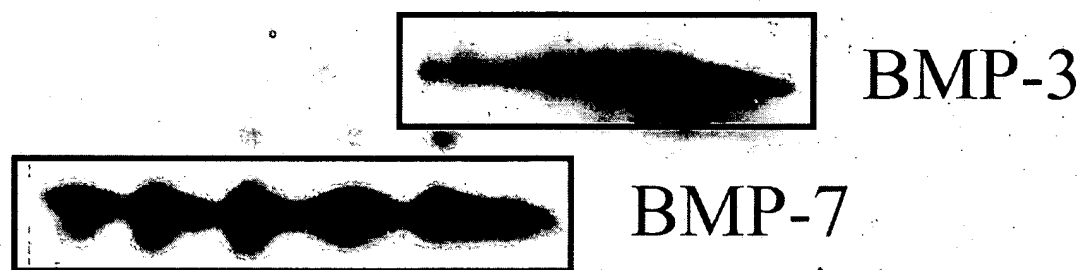


FIG. 25B

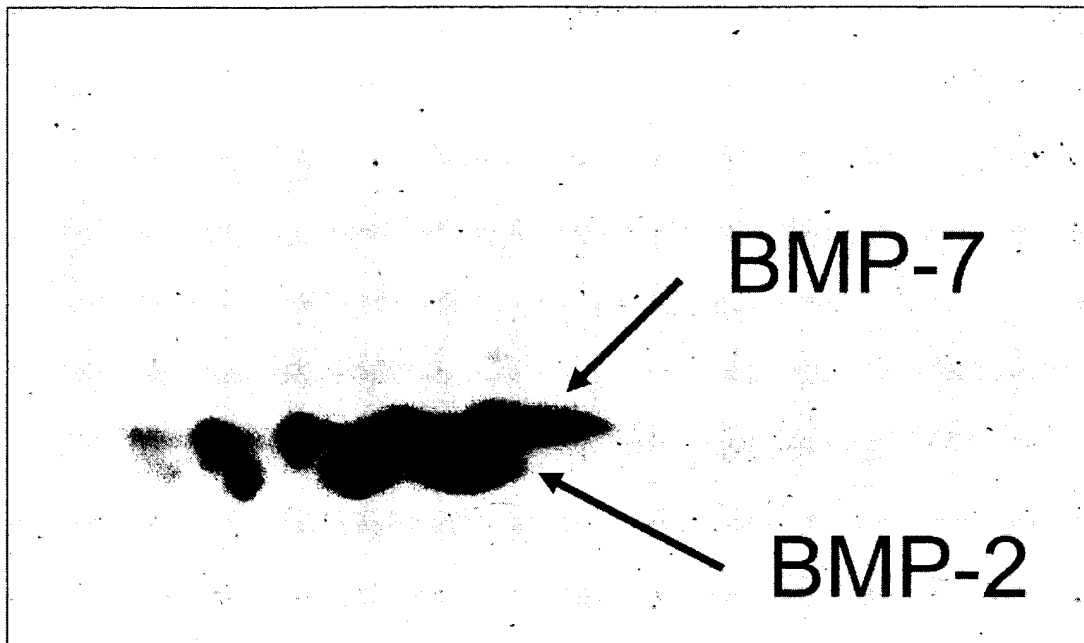


FIG. 25C

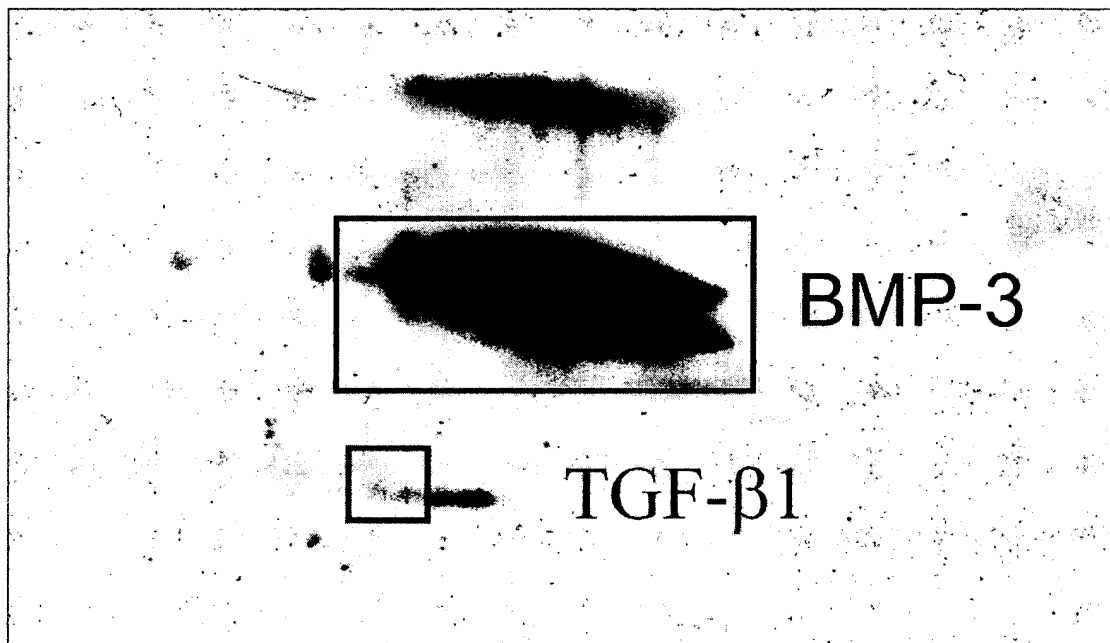


FIG. 25D

FIG. 26

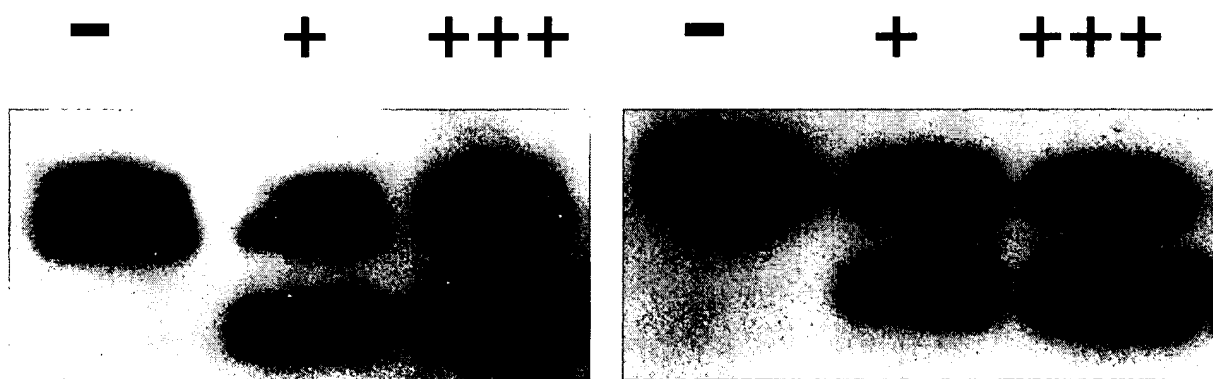
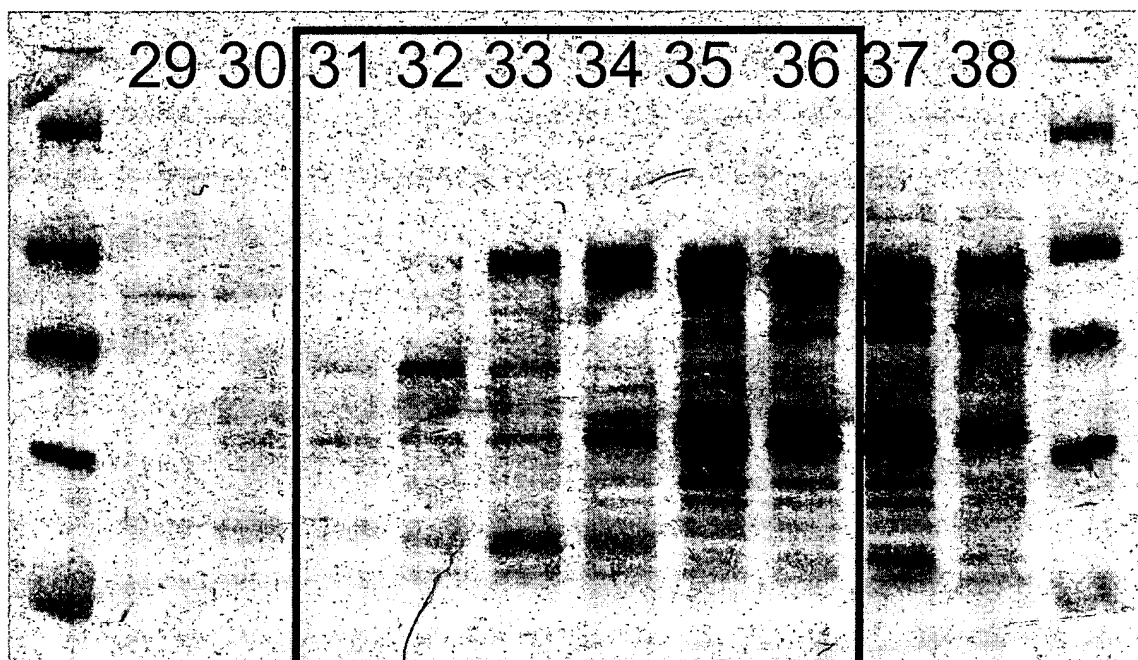


FIG. 27

FIG. 28

FIG. 29A

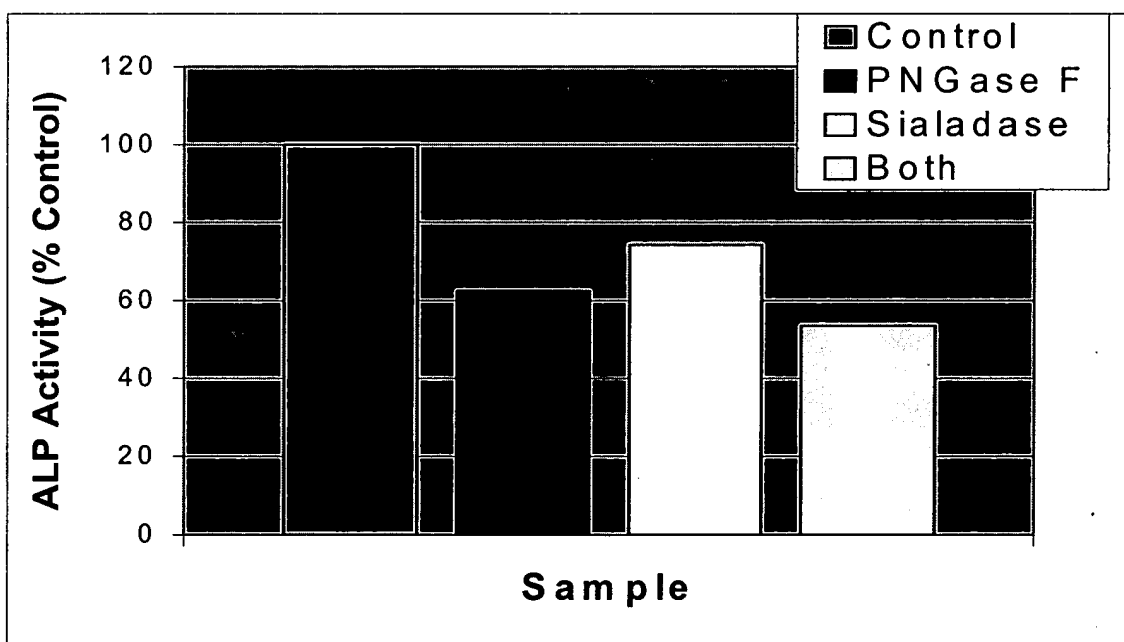
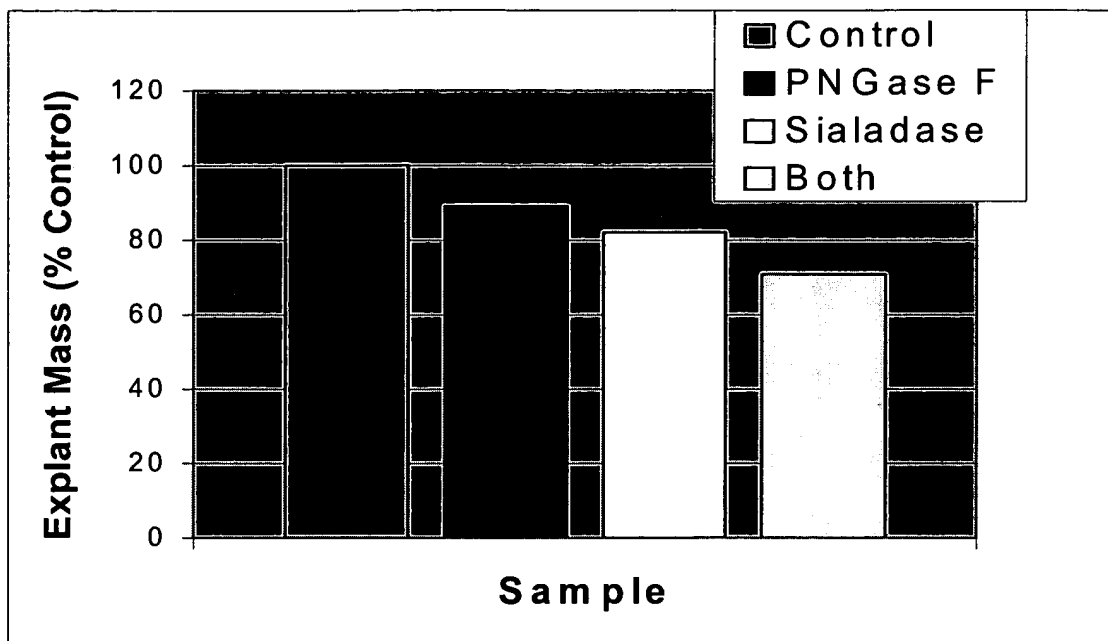


FIG. 29B

FIG. 30A

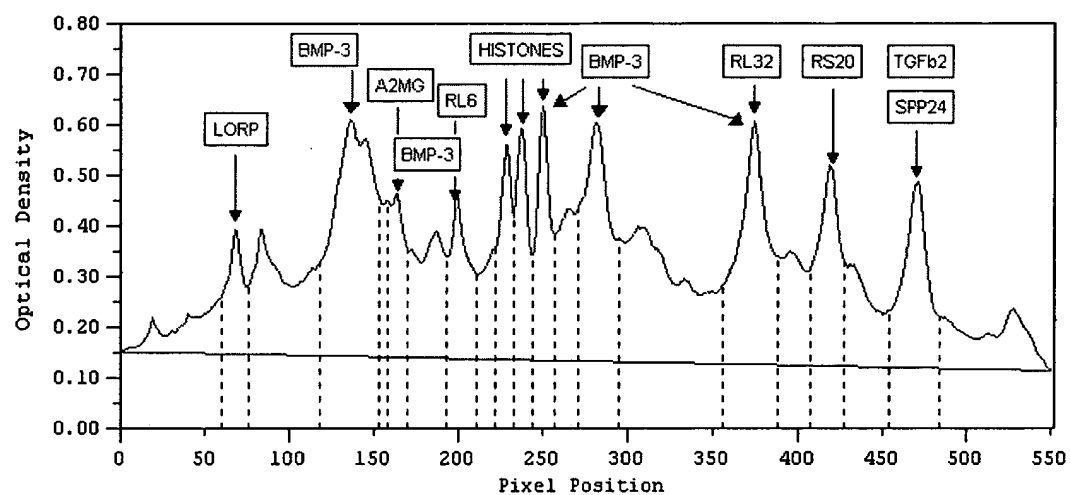


FIG. 30B

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